

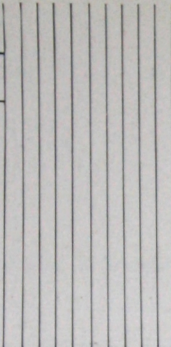
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Architects and Engineers
REFERENCE MANUAL
BUILT-UP ROOFING · · · FLASHING
ROOF DRAINAGE · · WATERPROOFING

The *Barnett* Company
FRANKLIN SQUARE
PHILADELPHIA

FRANKLIN INSTITUTE
PHILADELPHIA



Architect's and Engineer's REFERENCE MANUAL

This manual contains specifications and detailed drawings treating with the following subjects:

Built-Up Roofing—for flat roof decks—Section I

Built-Up Roofing—for steep roof decks—Section II

Roof Flashing Section III

Roof Drainage Section IV

Waterproofing Section V

The data presented comprise the most practical methods and procedure based on three-quarters of a century's experience, the essence of which is incorporated to the fullest extent possible.

For any unusual roofing or waterproofing problems, not covered in this book, a construction service department is maintained, the members of which are available for consultation at any time and without obligation.

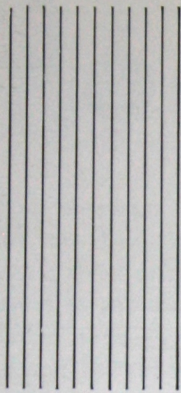
The *Barrett* Company

40 RECTOR STREET » » « « NEW YORK

DISTRICT OFFICES
NEW YORK, N. Y.—CHICAGO, ILL.
BIRMINGHAM, ALA.

IN CANADA
THE BARRETT CO., LTD.,
MONTREAL, QUE.

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Between the World and the Weather

BARRETT'S leadership in roofing and waterproofing dates back more than three-quarters of a century. Pioneers in the field, Barrett has, since the early days of built-up roof construction, improved its materials, application methods and facilities for service, stride for stride with the advance of the building industry.

Today the famous Barrett Specification is recognized everywhere as the standard of value for built-up roof construction—a ranking consistently held since its introduction decades ago. Barrett introduced the practice of bonding roofs, definitely freeing building owners from periodical repair or maintenance expense. Barrett initiated the bonding of roof flashings, eliminating divided responsibility. The Barrett organization of approved roofing contractors was the first ever established; and Barrett's complete roof inspection service, introduced years ago, is unique in the roofing field.

That this complete service has obtained uniformly satisfactory results is best evidenced by thoroughly authenticated records of proved performance—many of the early installations having already given 30, 40 and 50 years of service without repair or maintenance expense. Repeat business from nationally known organizations substantiates these records and presents staunch testimony to the enduring qualities of Barrett Roof construction.

We believe that such records of performance, together with the universal acceptance of this type of roof by leading architects, engineers and builders of modern structures, convincingly demonstrate that there are no better materials for built-up roof construction than high quality coal-tar pitch and roofing felt . . . and that no finer materials of this character are obtainable than those bearing the Barrett label.

. . . . Since 1854



Time gives Proof of

Roof value that impresses architects, building owners and contractors is roof value that has existed long enough to have proved itself. Since the earliest installations of Barrett roofs, Barrett materials and application methods have made lasting roofs—and lasting friends.



1—New York Central Warehouse and Freight Depot
Beach and Varick Streets
New York, N. Y.

2—Exchange Building
Boston, Mass.

3—Eastern Steamship Lines
North Side India Wharf
Boston, Mass.

4—J. T. Fargason & Co. Building
Memphis, Tenn.

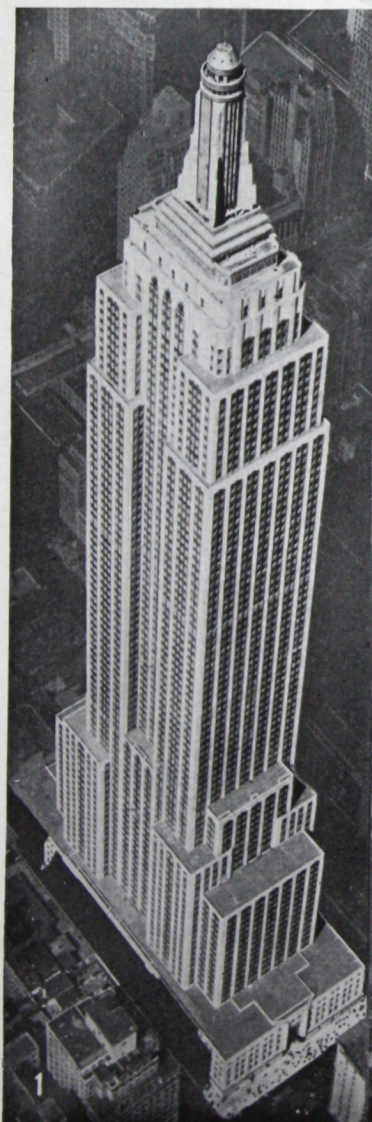
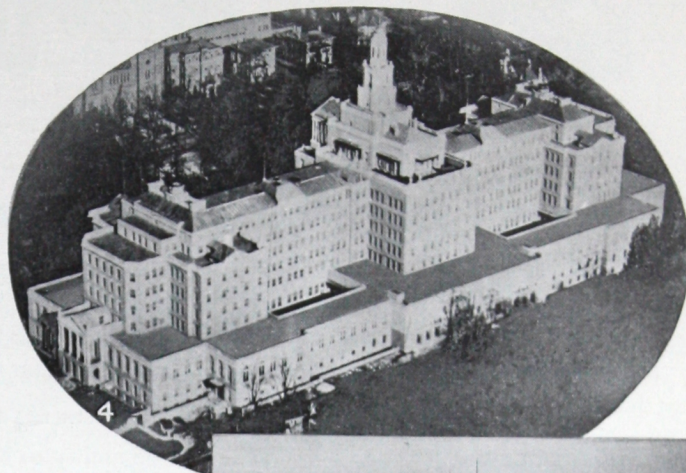
5—Tiffany Building
15th Street and Union Square
New York, N. Y.



Roof Performance...

Many famous old buildings, built half a century ago and longer, find their original Barrett roofs still giving satisfactory service; while the outstanding structures of recent years, roofed by Barrett, are far too numerous to picture or even to list in these pages.

- 1—Empire State Building
New York, N. Y.
- 2—Louisiana State Capitol Building
Baton Rouge, La.
- 3—Nebraska State Capitol Building
Lincoln, Neb.
- 4—New Home Office of Aetna Life Insurance
Company and Affiliated Companies
Hartford, Conn.
- 5—Fisher Building
Detroit, Mich.
- 6—Waldorf-Astoria Hotel
New York, N. Y.



Barrett Specification Roofs

*

and the Barrett Approved Roofer

OF THE many factors essential to satisfactory roof performance, none are more important than (1) proper selection of materials and (2) the employment of skilled workmanship in their application. The first is entirely a matter of specification provision and enforcement; the second, of selecting a dependable and experienced contractor whose ability to execute the character of work involved has been thoroughly established.

Barrett Specification Roofs are applied only by Barrett Approved Roofers; the selection of whom is based upon experience, ability and integrity. Barrett Approved Roofers everywhere are dependable and invariably are leaders in their communities. Architects, Engineers and Builders may rely on them completely to handle the character of work incorporated in this publication.

As the work of Barrett Approved Roofers is executed under the direct supervision and with the co-operation of technically experienced Barrett representatives, the purchaser of a Barrett Specification Roof is assured a degree of satisfactory roof performance far beyond that prescribed in the terms of any guarantee or bond.

* Trade Mark Registered U.S. Pat. Off.



Prominent Buildings in Midtown New York Are Protected by Barrett Specification Roofs

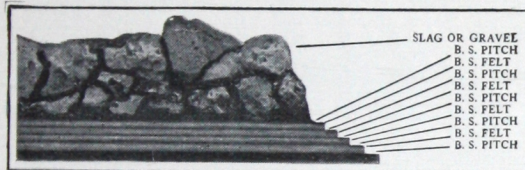
SECTION 1

Flat Roof Specifications and Details

ROOFS having inclines of not more than two inches in one foot are generally classified as flat roofs.

The practical purpose of the flat roof, or of any roof, is to protect the interior, the contents and the occupants of a building from rain, snow, heat and cold. In addition, a good roof should provide effectual protection against the spread of fire, prevent dampness, add to the character of the building, and offer freedom from periodical repair or maintenance expense.

The Barrett Specification Roof—Type "AA" or Type "A"—meets these requirements for flat roof construction.



Barrett Specification Roofing

Built of alternate layers of Barrett Specification Pitch and Felt (the top coat of pitch is poured) with an indestructible wearing surface of gravel or slag.

It is constructed of highest quality coal-tar pitch and roofing felt, properly applied in the membrane manner, and surfaced with gravel, roofing slag, promenade slate or quarry tile.

Barrett Specification Pitch is preserved by water. Its life-prolonging oils are protected by the same dampness and moisture that weaken ordinary materials. Pitch is self-healing; is virtually immune to climatic variations;

and possesses creosote properties that outlaw fermentation or the development of fungi.

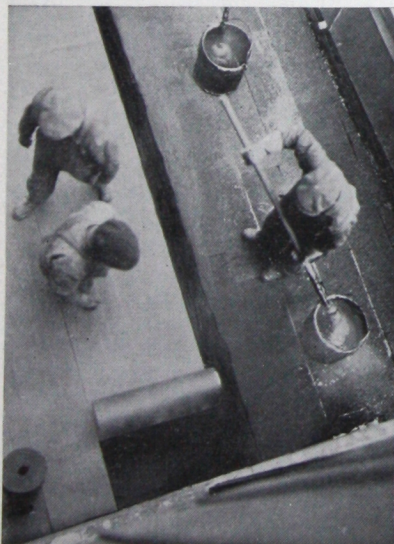
Both Barrett Specification Pitch and Barrett Specification Felt are manufactured to be—and are conceded to be—the best it is possible to produce. Gravel, slag, slate or tile provides a fire-safe, practically indestructible wearing surface which protects the membrane and permits the use of a maximum of waterproofing materials.

Barrett Specification Roofs take the base rate of insurance. They require no painting or coating. Their moderate first cost and enduring qualities effect a cost per year of service far below that of any other type of built-up roof known. They provide a permanent part of permanent building construction.

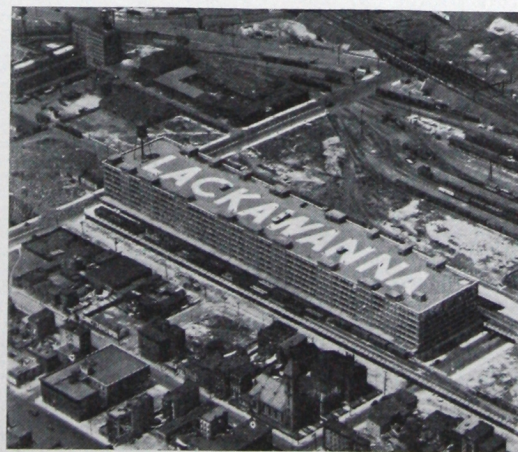
The specifications which follow are based on proper use of materials of recognized quality and quantity. They have been formulated by THE BARRETT COMPANY and cover many particular types of flat roof construction recommended for use under the specific conditions outlined.



The Barrett Inspector Making the Famous "Cut Test"



Applying Barrett Specification Felt in Hot Mopping of Barrett Specification Pitch



The Lackawanna Railroad Freight Terminal, Jersey City, Is Protected by a Barrett Specification Roof Surfaced with Gravel and Slag



The Finished Wearing Surface of Gravel or Slag is Embedded in a Hot Pouring of Barrett Specification Pitch



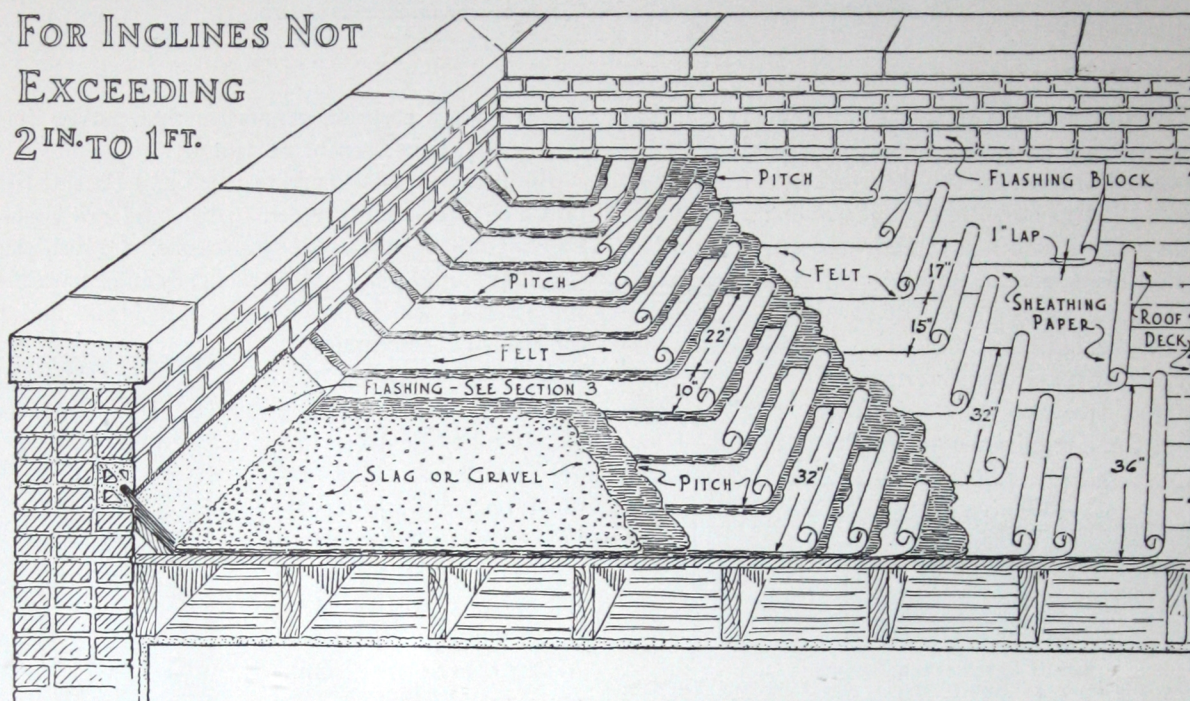
BARRETT SPECIFICATION ROOFS

20 YEAR GUARANTY BOND TYPE 'AA'

FOR USE OVER WOOD DECKS



FOR INCLINES NOT
EXCEEDING
2 IN. TO 1 FT.



SPECIFICATION

The roof deck shall be of seasoned lumber, smooth and free from loose boards, large cracks or knot holes, and free from loose material. If roof deck is inclined, it shall be properly graded to outlets.

First—Lay one (1) thickness of sheathing paper or unsaturated felt weighing not less than five (5) pounds per one hundred (100) square feet, lapping the sheets at least one (1) inch.

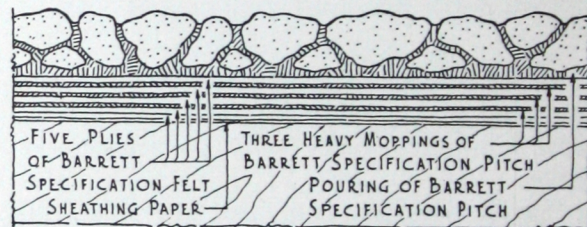
Second—Over the entire surface lay two (2) plies of Specification Tarred Felt, lapping each sheet seventeen (17) inches over preceding one and nail as often as is necessary to hold in place until remaining Felt is laid.

Third—Coat the entire surface uniformly with Specification Pitch.

Fourth—Over the entire surface lay three (3) plies of Specification Tarred Felt, lapping each sheet twenty-two (22) inches, over preceding one, mopping with Specification Pitch the full twenty-two (22) inch lap on each sheet so that in no place shall Felt touch Felt. Such nailing as is necessary shall be done along the upper edge of each sheet so that all nails will be covered by not less than two (2) plies of Felt.

Fifth—Over the entire surface pour from a dipper a uniform coating of Specification Pitch, into which, while hot, embed not less than four hundred (400) pounds of gravel or three hundred (300) pounds of slag for each one hundred (100) square feet. The gravel or slag shall be from one-quarter ($\frac{1}{4}$) inch to five-eighths ($\frac{5}{8}$) inch in size, dry and free from dirt.

General—The Felt shall be laid without wrinkles or buckles. Not less than one hundred and fifty (150) pounds of Pitch shall be used for constructing each one hundred (100) square feet of completed roof, and



FULL SIZE SECTION

the Pitch shall not be heated above four hundred (400) degrees Fahrenheit.

The roof shall be applied by a roofing contractor approved by The Barrett Company. He shall furnish THE BARRETT COMPANY'S Surety Bond Guaranty issued by the U. S. Fidelity and Guaranty Co. of Baltimore, covering a period of twenty (20) years from date of completion, in accordance with Note No. 1.

Note No. 1—THE BARRETT COMPANY will give its twenty (20) year Guaranty Bond on all jobs of five thousand (5000) square feet or more in the United States and Canada where its inspection service is available, provided the roof is applied by a roofing contractor approved by THE BARRETT COMPANY in strict accordance with the above specification and subject to Barrett inspection and approval.

Condensed Specification

Roofing—Shall be a Barrett Specification Roof, Type "AA", laid in accordance with the Barrett Specification (for use over boards), by a roofing contractor approved by THE BARRETT COMPANY. The roofing contractor shall furnish THE BARRETT COMPANY'S Surety Bond Guaranty for twenty (20) years from date of completion, in accordance with Note. No. 1 of said specification.

See Section No. 3 for Specifications and Details on Flashings.

Barrett

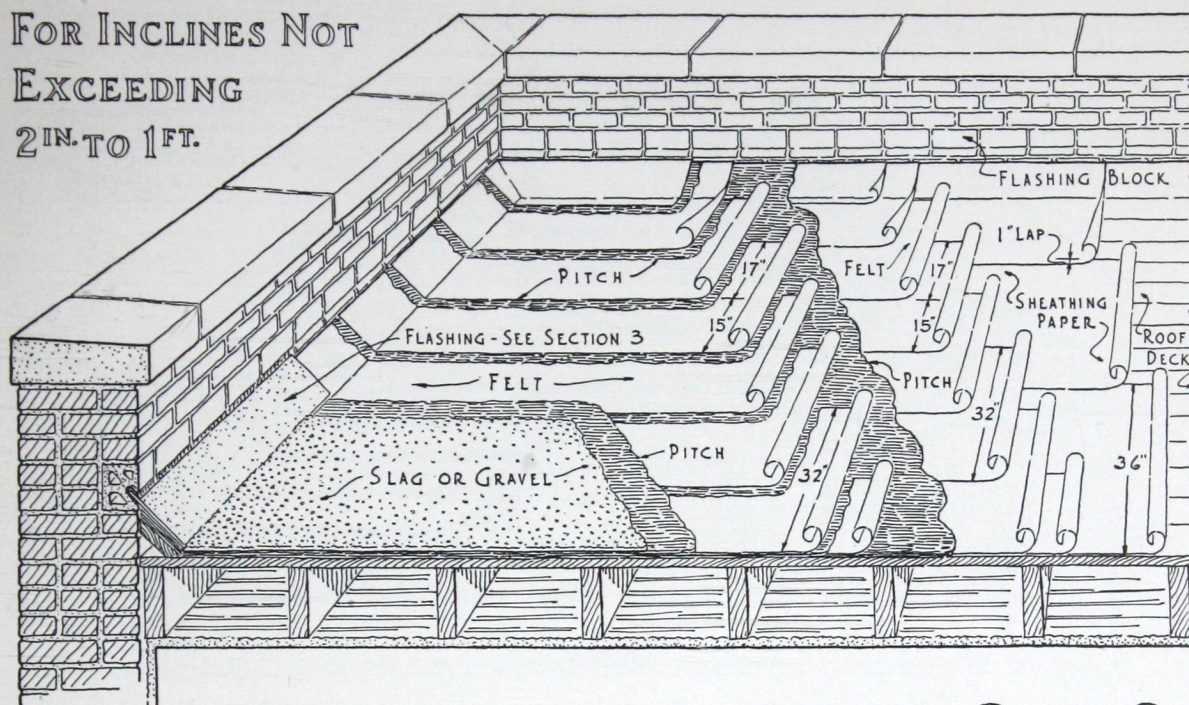


BARRETT SPECIFICATION ROOFS

15 YEAR GUARANTY BOND TYPE 'A'
FOR USE OVER WOOD DECKS



FOR INCLINES NOT
EXCEEDING
2 IN. TO 1 FT.



SPECIFICATION

The roof deck shall be of seasoned lumber, smooth and free from loose boards, large cracks or knot holes, and free from loose material. If roof deck is inclined, it shall be properly graded to outlets.

First—Lay one (1) thickness of sheathing paper or unsaturated Felt, weighing not less than five (5) pounds per one hundred (100) square feet, lapping the sheets at least one (1) inch.

Second—Over the entire surface lay two (2) plies of Specification Tarred Felt, lapping each sheet seventeen (17) inches over preceding one, and nail as often as is necessary to hold in place until remaining Felt is laid.

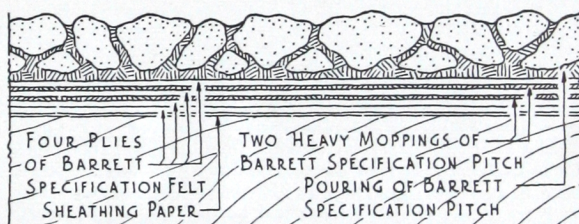
Third—Coat the entire surface uniformly with Specification Pitch.

Fourth—Over the entire surface lay two (2) plies of Specification Tarred Felt, lapping each sheet seventeen (17) inches over preceding one, mopping with Specification Pitch the full seventeen (17) inch lap on each sheet so that in no place shall Felt touch Felt. Such nailing as is necessary shall be done along the upper edge of each sheet so that all nails will be covered by not less than two (2) plies of Felt.

Fifth—Over the entire surface pour from a dipper a uniform coating of Specification Pitch, into which, while hot, embed not less than four hundred (400) pounds of gravel or three hundred (300) pounds of slag for each one hundred (100) square feet. The gravel or slag shall be from one-quarter ($\frac{1}{4}$) inch to five-eighths ($\frac{5}{8}$) inch in size, dry and free from dirt.

General—The felt shall be laid without wrinkles or buckles. Not less than one hundred and twenty-five (125) pounds of Pitch shall be used for constructing each one hundred (100) square feet of completed roof,

See Section No. 3 for Specifications and Details on Flashings.



FULL SIZE SECTION

and the Pitch shall not be heated above four hundred (400) degrees Fahrenheit.

The roof shall be applied by a roofing contractor approved by THE BARRETT COMPANY. He shall furnish THE BARRETT COMPANY'S Surety Bond Guaranty by the U. S. Fidelity and Guaranty Company of Baltimore, covering a period of fifteen (15) years from date of completion, in accordance with Note No. 1.

Note No. 1—THE BARRETT COMPANY will give its fifteen (15) year Guaranty Bond on all jobs of five thousand (5,000) square feet or more in the United States and Canada where its inspection service is available, provided the roof is applied by a roofing contractor approved by THE BARRETT COMPANY in strict accordance with the above specification and subject to Barrett inspection and approval.

Condensed Specification

Roofing—Shall be a Barrett Specification Roof, Type "A", laid in accordance with the Barrett Specification (for use over boards), by a roofing contractor approved by THE BARRETT COMPANY. The roofing contractor shall furnish THE BARRETT COMPANY'S Surety Bond Guaranty for fifteen (15) years, in accordance with Note No. 1 of said specification.

Barrett



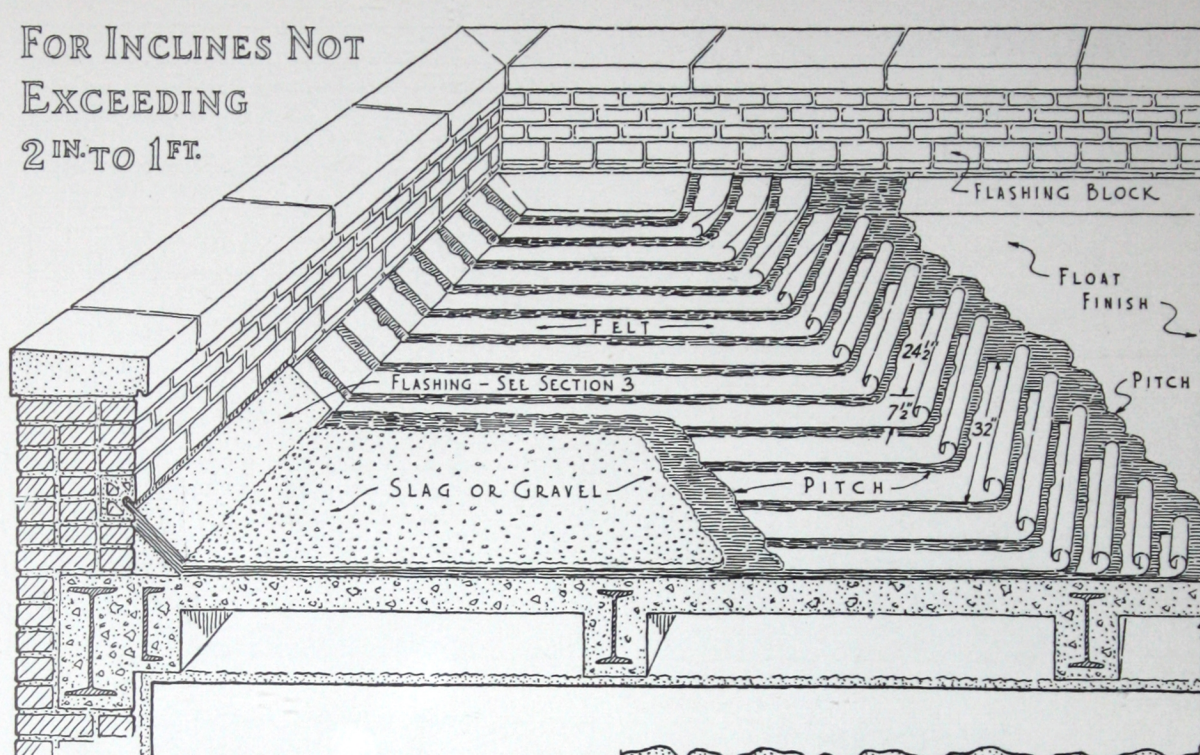
BARRETT SPECIFICATION ROOFS

20 YEAR GUARANTY BOND TYPE 'AA'

FOR USE OVER POURED CONCRETE OR GYPSUM



FOR INCLINES NOT
EXCEEDING
2 IN. TO 1 FT.



SPECIFICATION

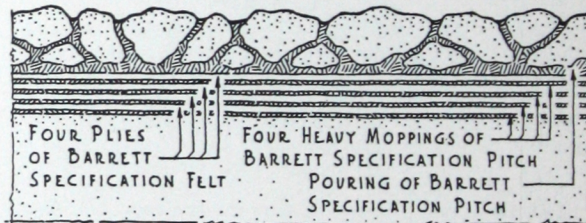
The roof deck shall be smooth, firm, dry and free from loose material. If roof deck is inclined, it shall be properly graded to outlets. On inclines exceeding one (1) inch to the foot, roof deck shall permit nailing or wood nailing strips shall be provided.

First—Coat the roof deck uniformly with Specification Pitch.

Second—Over the entire surface lay four (4) plies of Specification Tarred Felt, lapping each sheet twenty-four and one-half ($24\frac{1}{2}$) inches over preceding one, mopping with Specification Pitch the full twenty-four and one-half ($24\frac{1}{2}$) inch lap on each sheet, so that in no place shall Felt touch Felt. Such nailing as is necessary shall be done along upper edge of each sheet so that all nails shall be covered by not less than three (3) plies of felt.

Third—Over the entire surface pour from a dipper a uniform coating of Specification Pitch, into which, while hot, embed not less than four hundred (400) pounds of gravel or three hundred (300) pounds of slag for each one hundred (100) square feet. The gravel or slag shall be from one-quarter ($\frac{1}{4}$) inch to five-eighths ($\frac{5}{8}$) inch in size, dry and free from dirt.

General—The Felt shall be laid without wrinkles or buckles. Not less than two hundred (200) pounds of Pitch shall be used for constructing each one hundred (100) square feet of completed roof, and the Pitch shall not be heated above four hundred (400) degrees Fahrenheit.



FULL SIZE SECTION

The roof shall be applied by a roofing contractor approved by THE BARRETT COMPANY. He shall furnish THE BARRETT COMPANY'S Surety Bond Guaranty issued by the U. S. Fidelity and Guaranty Company of Baltimore, covering a period of twenty (20) years from date of completion, in accordance with Note No. 1.

Note No. 1—THE BARRETT COMPANY will give its twenty (20) year Guaranty Bond on all jobs of five thousand (5000) square feet or more in the United States and Canada where its inspection service is available, provided the roof is applied by a roofing contractor approved by THE BARRETT COMPANY in strict accordance with the above specification and subject to Barrett inspection and approval.

Condensed Specification

Roofing—Shall be a Barrett Specification Roof, Type "AA", laid in accordance with the Barrett Specification (for use over poured concrete or gypsum) by a roofing contractor approved by THE BARRETT COMPANY. The roofing contractor shall furnish THE BARRETT COMPANY'S Surety Bond Guaranty for twenty (20) years, in accordance with Note No. 1 of said specification.

See Section No. 3 for Specifications and Details on Flashings.

Barrett

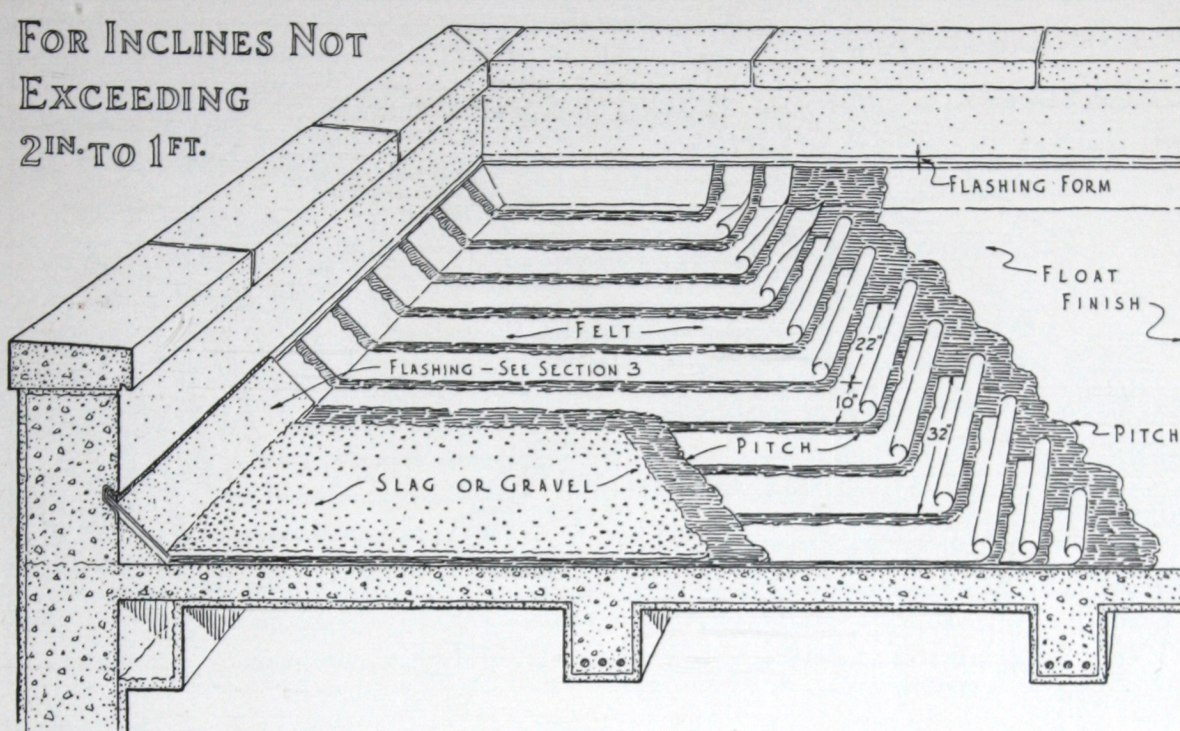


BARRETT SPECIFICATION ROOFS

15 YEAR GUARANTY BOND, TYPE "A"
FOR USE OVER POURED CONCRETE or GYPSUM



FOR INCLINES NOT
EXCEEDING
2 IN. TO 1 FT.



SPECIFICATION

The roof deck shall be smooth, firm, dry and free from loose material. If roof deck is inclined, it shall be properly graded to outlets. On inclines exceeding one (1) inch to the foot, roof deck shall permit nailing or wood nailing strips shall be provided.

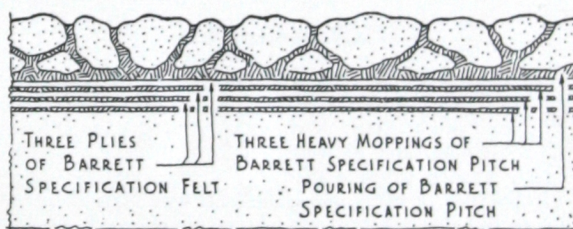
First—Coat the roof deck uniformly with Specification Pitch.

Second—Over the entire surface lay three (3) plies of Specification Tarred Felt, lapping each sheet twenty-two (22) inches over preceding one, mopping with Specification Pitch the full twenty-two (22) inch lap on each sheet so that in no place shall Felt touch Felt. Such nailing as is necessary shall be done along the upper edge of each sheet so that all nails shall be covered by not less than two (2) plies of Felt.

Third—Over the entire surface pour from a dipper a uniform coating of Specification Pitch, into which, while hot, embed not less than four hundred (400) pounds of gravel or three hundred (300) pounds of slag for each one hundred (100) square feet. The gravel or slag shall be from one-quarter ($\frac{1}{4}$) inch to five-eighths ($\frac{5}{8}$) inch in size, dry and free from dirt.

General—The Felt shall be laid without wrinkles or buckles. Not less than one hundred and seventy-five (175) pounds of Pitch shall be used for constructing each one hundred (100) square feet of completed roof, and the Pitch shall not be heated above four hundred (400) degree Fahrenheit.

The roof shall be applied by a roofing contractor ap-



FULL SIZE SECTION

proved by THE BARRETT COMPANY. He shall furnish THE BARRETT COMPANY'S Surety Bond Guaranty issued by the U. S. Fidelity and Guaranty Company of Baltimore, covering a period of fifteen (15) years from date of completion, in accordance with Note No. 1.

Note No. 1—THE BARRETT COMPANY will give its fifteen (15) year Guaranty Bond on all jobs of five thousand (5,000) square feet or more in the United States and Canada where its inspection service is available, provided the roof is applied by a roofing contractor approved by THE BARRETT COMPANY in strict accordance with the above specification and subject to Barrett inspection and approval.

Condensed Specification

Roofing—Shall be a Barrett Specification Roof, Type "A", laid in accordance with the Barrett Specification (for use over concrete), by a roofing contractor approved by THE BARRETT COMPANY. The roofing contractor shall furnish THE BARRETT COMPANY'S Surety Bond Guaranty for fifteen (15) years, in accordance with Note No. 1 of said specification.

See Section No. 3 for Specifications and Details on Flashings.

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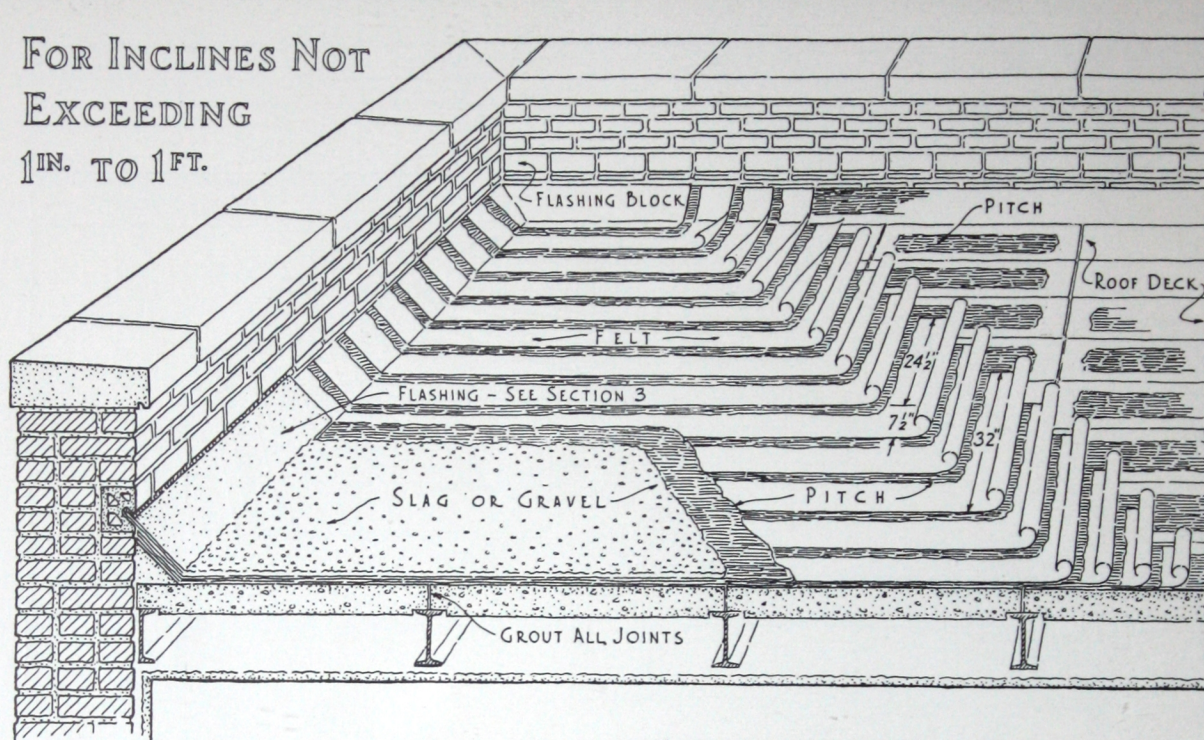


BARRETT SPECIFICATION ROOFS

20 YEAR GUARANTY BOND, TYPE "AA"
FOR USE OVER PRECAST CONCRETE SLABS



FOR INCLINES NOT
EXCEEDING
1 IN. TO 1 FT.



SPECIFICATION

All joints between concrete slabs shall be properly grouted.

The roof deck shall be smooth, firm, dry and free from loose material. If roof deck is inclined, it shall be properly graded to outlets.

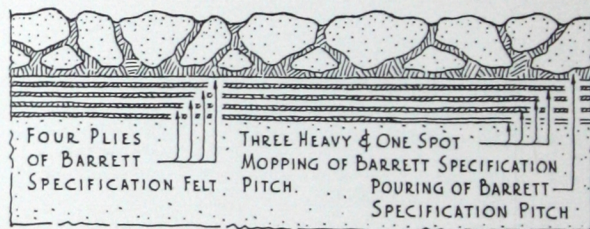
First—Spot or strip mop each slab with Specification Pitch, care being taken that pitch moppings are held back to within four (4) inches from the edge of each joint.

Second—Over the entire surface lay four (4) plies of Specification Tarred Felt, lapping each sheet twenty-four and one-half ($24\frac{1}{2}$) inches, over preceding one, mopping with Specification Pitch the full twenty-four and one-half ($24\frac{1}{2}$) inch lap on each sheet, so that in no place shall Felt touch Felt.

Third—Over the entire surface pour from a dipper a uniform coating of Specification Pitch, into which, while hot, embed not less than four hundred (400) pounds of gravel or three hundred (300) pounds of slag for each one hundred (100) square feet. The gravel or slag shall be from one-quarter ($\frac{1}{4}$) inch to five-eighths ($\frac{5}{8}$) inch in size, dry and free from dirt.

General—The Felt shall be laid without wrinkles or buckles. Not less than two hundred (200) pounds of Pitch shall be used for constructing each one hundred (100) square feet of completed roof, and the Pitch shall not be heated above four hundred (400) degrees Fahrenheit.

The roof shall be applied by a roofing contractor ap-



FULL SIZE SECTION

proved by THE BARRETT COMPANY. He shall furnish THE BARRETT COMPANY'S Surety Bond Guaranty issued by the U. S. Fidelity and Guaranty Company of Baltimore, covering a period of twenty (20) years from date of completion, in accordance with Note No. 1.

Note No. 1—THE BARRETT COMPANY will give its twenty (20) year Guaranty Bond on all jobs of five thousand (5000) square feet or more in the United States and Canada where its inspection service is available, provided the roof is applied by a roofing contractor approved by THE BARRETT COMPANY in strict accordance with the above specification and subject to Barrett inspection and approval.

Condensed Specification

Roofing—Shall be a Barrett Specification Roof, Type "AA", laid in accordance with the Barrett Specification (for use over precast concrete slabs), by a roofing contractor approved by THE BARRETT COMPANY. The roofing contractor shall furnish THE BARRETT COMPANY'S Surety Bond Guaranty for twenty (20) years, in accordance with Note No. 1 of said specification.

See Section No. 3 for Specifications and Details on Flashings.

Barrett

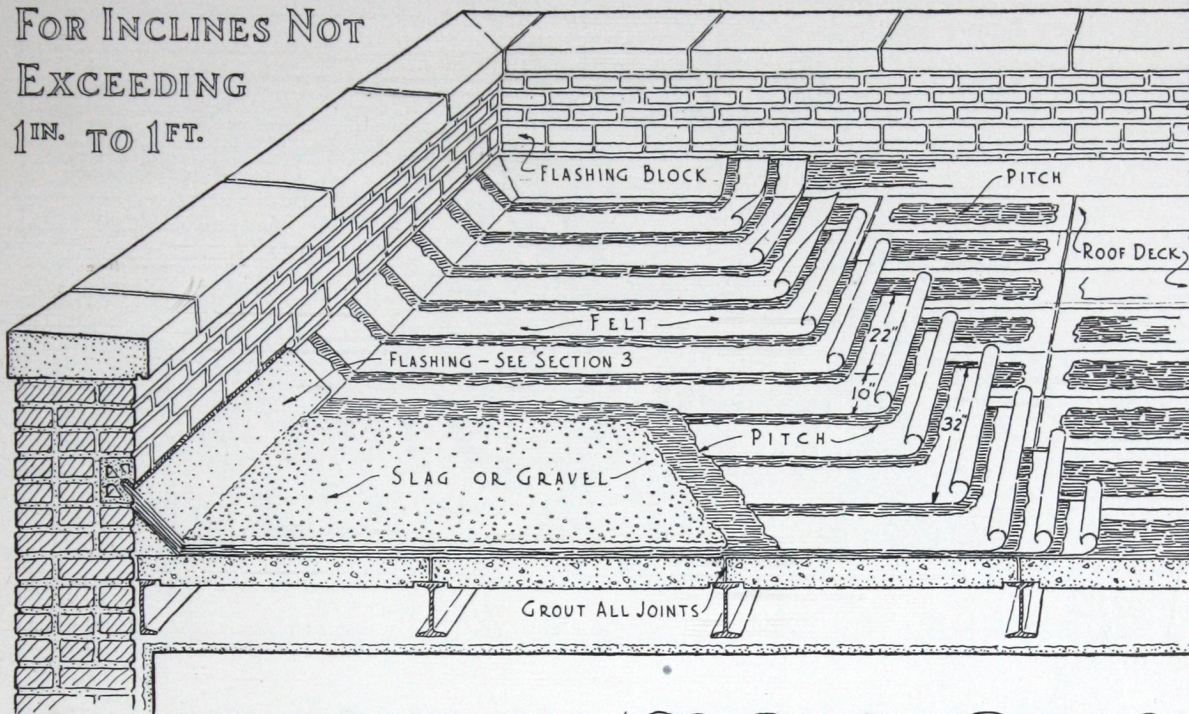


BARRETT SPECIFICATION ROOFS

15 YEAR GUARANTY BOND TYPE "A"
FOR USE OVER PRECAST CONCRETE SLABS



FOR INCLINES NOT
EXCEEDING
1 IN. TO 1 FT.



SPECIFICATION

All joints between concrete slabs shall be properly grouted.

The roof deck shall be smooth, firm, dry and free from loose material. If roof deck is inclined, it shall be properly graded to outlets.

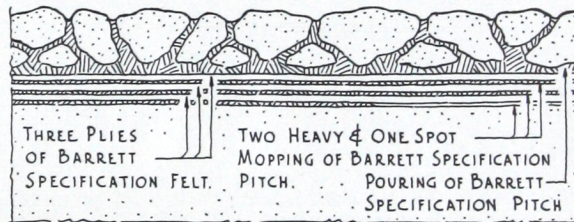
First—Spot or strip mop each slab with Specification Pitch, care being taken that pitch moppings are held back to within four (4) inches from the edge of each joint.

Second—Over the entire surface lay three (3) plies of Specification Tarred Felt, lapping each sheet twenty-two (22) inches over preceding one, mopping with Specification Pitch the full twenty-two (22) inch lap on each sheet so that in no place shall Felt touch Felt.

Third—Over the entire surface pour from a dipper a uniform coating of Specification Pitch, into which, while hot, embed not less than four hundred (400) pounds of gravel or three hundred (300) pounds of slag for each one hundred (100) square feet. The gravel or slag shall be from one-quarter ($\frac{1}{4}$) inch to five-eighths ($\frac{5}{8}$) inch in size, dry and free from dirt.

General—The Felt shall be laid without wrinkles or buckles. Not less than one hundred and seventy-five (175) pounds of Pitch shall be used for constructing each one hundred (100) square feet of completed roof, and the Pitch shall not be heated above four hundred (400) degrees Fahrenheit.

The roof shall be applied by a roofing contractor approved by THE BARRETT COMPANY. He shall furnish



FULL SIZE SECTION

THE BARRETT COMPANY'S Surety Bond Guaranty issued by the U. S. Fidelity and Guaranty Company of Baltimore, covering a period of fifteen (15) years from date of completion, in accordance with Note No. 1.

Note No. 1—THE BARRETT COMPANY will give its fifteen (15) year Guaranty Bond on all jobs of five thousand (5,000) square feet or more in the United States and Canada where its inspection service is available, provided the roof is applied by a roofing contractor approved by THE BARRETT COMPANY in strict accordance with the above specification and subject to Barrett inspection and approval.

Condensed Specification

Roofing—Shall be a Barrett Specification Roof, Type "A", laid in accordance with the Barrett Specification (for use over precast concrete slabs), by a roofing contractor approved by THE BARRETT COMPANY. The roofing contractor shall furnish THE BARRETT COMPANY'S Surety Bond Guaranty for fifteen (15) years, in accordance with Note No. 1 of said specification.

See Section No. 3 for Specifications and Details on Flashings.



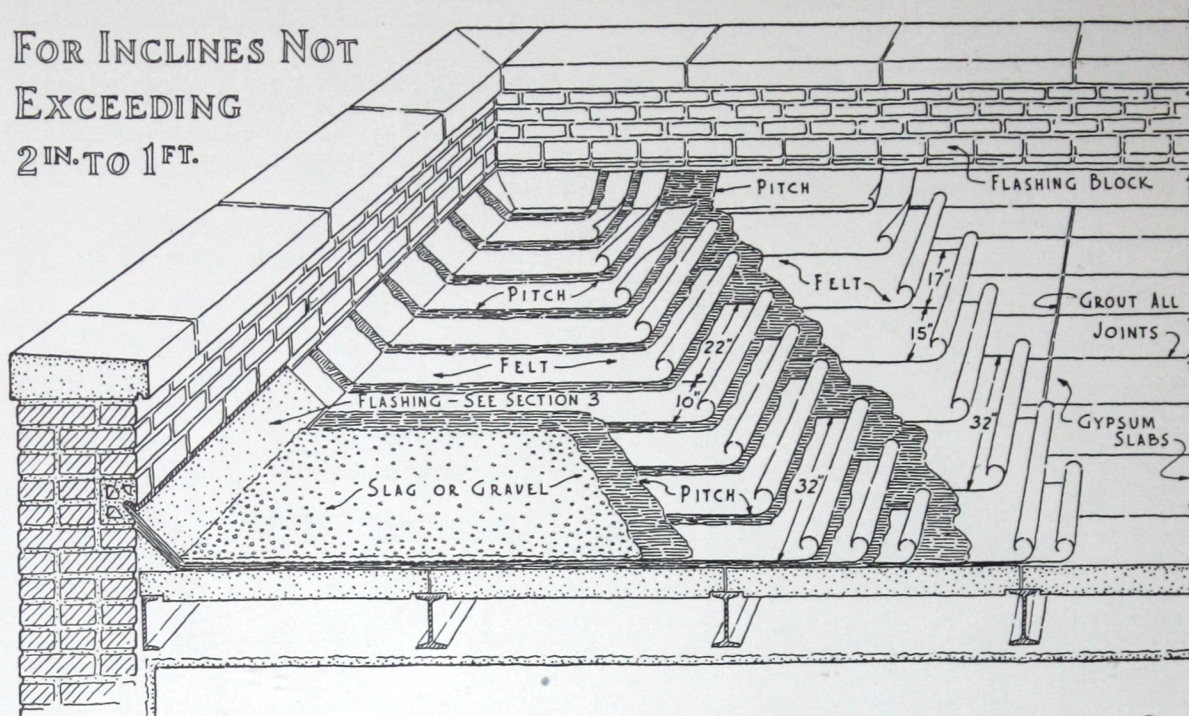


BARRETT SPECIFICATION ROOFS

20 YEAR GUARANTY BOND TYPE "AA"
FOR USE OVER PRECAST GYPSUM SLABS



FOR INCLINES NOT
EXCEEDING
2 IN. TO 1 FT.



SPECIFICATION

All joints between gypsum precast slabs shall be properly grouted.

The roof deck shall be smooth, dry and free from loose material. If roof deck is inclined, it shall be properly graded to outlets.

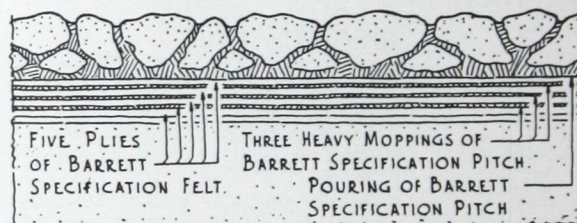
First—Over the entire surface lay two (2) plies of Specification Tarred Felt, lapping each sheet seventeen (17) inches over preceding one and nail as often as is necessary to hold in place until remaining Felt is laid.

Second—Coat the entire surface uniformly with Specification Pitch.

Third—Over the entire surface lay three (3) plies of Specification Tarred Felt, lapping each sheet twenty-two (22) inches over preceding one, mopping with Specification Pitch the full twenty-two (22) inch lap on each sheet so that in no place shall Felt touch Felt. Each sheet shall be nailed six (6) inches from the upper edge, nails to be spaced not more than two (2) feet apart. Nails shall not exceed seven-eighths ($\frac{7}{8}$) inch in length and shall be driven through flat tin disks one (1) inch or more in diameter.

Fourth—Over the entire surface pour from a dipper a uniform coating of Specification Pitch, into which, while hot, embed not less than four hundred (400) pounds of gravel or three hundred (300) pounds of slag for each one hundred (100) square feet. The gravel or slag shall be from one-quarter ($\frac{1}{4}$) inch to five-eighths ($\frac{5}{8}$) inch in size, dry and free from dirt.

General—The Felt shall be laid without wrinkles or buckles. Not less than one hundred and fifty (150) pounds of Pitch shall be used for constructing each one hundred (100) square feet of completed roof, and the Pitch shall not be heated above four hundred (400)



FULL SIZE SECTION

degrees Fahrenheit.

The roof shall be applied by a roofing contractor approved by THE BARRETT COMPANY. He shall furnish THE BARRETT COMPANY'S Surety Bond Guaranty issued by the U. S. Fidelity and Guaranty Company of Baltimore, covering a period of twenty (20) years from date of completion, in accordance with Note No. 1.

Note No. 1—THE BARRETT COMPANY will give its twenty (20) year Guaranty Bond on all jobs of five thousand (5000) square feet or more in the United States and Canada where its inspection service is available, provided the roof is applied by a roofing contractor approved by THE BARRETT COMPANY in strict accordance with the above specification and subject to Barrett inspection and approval.

Condensed Specification

Roofing—Shall be a Barrett Specification Roof, Type "AA", laid in accordance with the Barrett Specification (for use over precast gypsum slabs), by a roofing contractor approved by THE BARRETT COMPANY. The roofing contractor shall furnish THE BARRETT COMPANY'S Surety Bond Guaranty for twenty (20) years, in accordance with Note No. 1 of said specification.

See Section No. 3 for Specifications and Details on Flashings.

Barrett



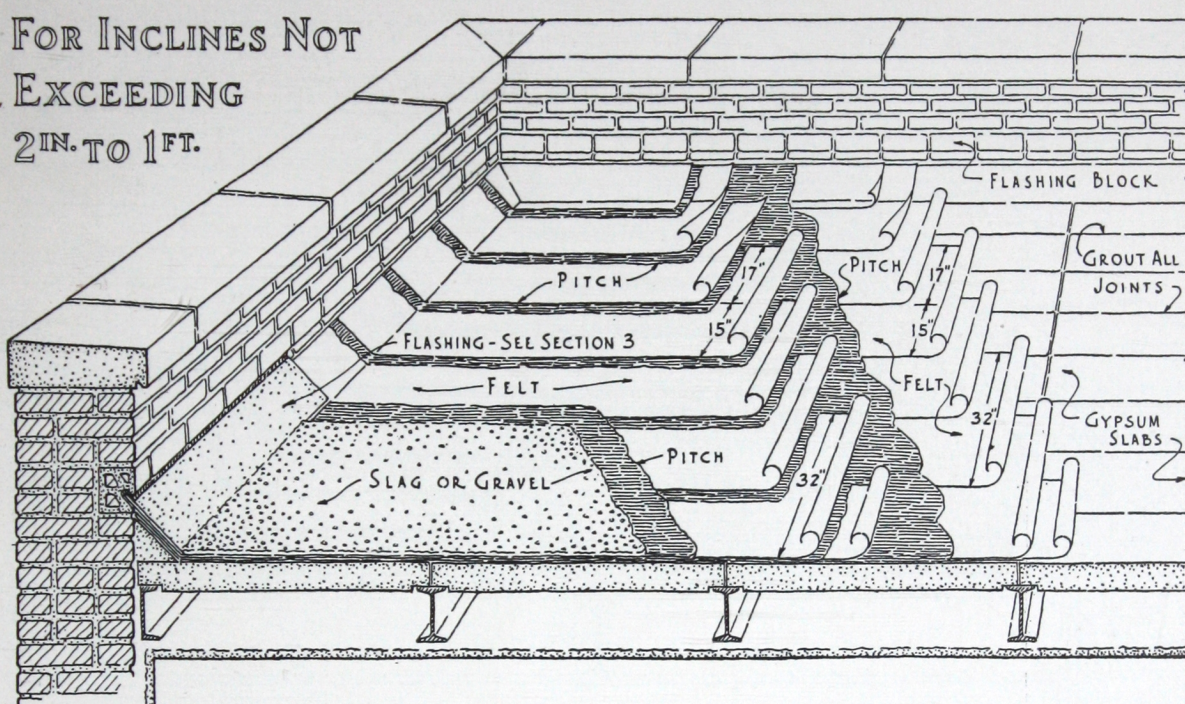
BARRETT SPECIFICATION ROOFS

15 YEAR GUARANTY BOND TYPE "A"

FOR USE OVER PRECAST GYPSUM SLABS



FOR INCLINES NOT
EXCEEDING
2 IN. TO 1 FT.



SPECIFICATION

All joints between gypsum precast slabs shall be properly grouted.

The roof deck shall be smooth, dry and free from loose material. If roof deck is inclined, it shall be properly graded to outlets.

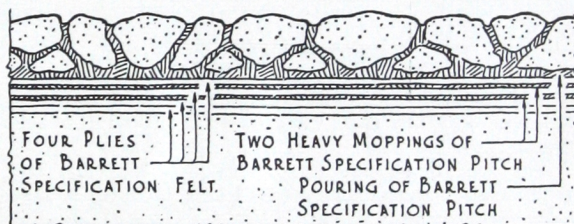
First—Over the entire surface lay two (2) plies of Specification Tarred Felt, lapping each sheet seventeen (17) inches over preceding one, and nail as often as is necessary to hold in place until remaining Felt is laid.

Second—Coat the entire surface uniformly with Specification Pitch.

Third—Over the entire surface lay two (2) plies of Specification Tarred Felt, lapping each sheet seventeen (17) inches over preceding one, mopping with Specification Pitch the full seventeen (17) inch lap on each sheet so that in no place shall Felt touch Felt. Each sheet shall be nailed six (6) inches from the upper edge, nails to be spaced not more than two (2) feet apart. Nails shall not exceed seven-eighths ($\frac{7}{8}$) inch in length and shall be driven through flat tin disks one (1) inch or more in diameter.

Fourth—Over the entire surface pour from a dipper a uniform coating of Specification Pitch into which, while hot, embed not less than four hundred (400) pounds of gravel or three hundred (300) pounds of slag for each one hundred (100) square feet. The gravel or slag shall be from one-quarter ($\frac{1}{4}$) inch to five-eighths ($\frac{5}{8}$) inch in size, dry and free from dirt.

General—The Felt shall be laid without wrinkles or buckles. Not less than one hundred and twenty-five (125) pounds of Pitch shall be used for constructing each one hundred (100) square feet of completed roof, and the Pitch shall not be heated above four hundred



FULL SIZE SECTION

(400) degrees Fahrenheit.

The roof shall be applied by a roofing contractor approved by THE BARRETT COMPANY. He shall furnish THE BARRETT COMPANY'S Surety Bond Guaranty issued by the U. S. Fidelity and Guaranty Company of Baltimore, covering a period of fifteen (15) years from date of completion, in accordance with Note No. 1.

Note No. 1—THE BARRETT COMPANY will give its fifteen (15) year Guaranty Bond on all jobs of five thousand (5,000) square feet or more in the United States and Canada where its inspection service is available, provided the roof is applied by a roofing contractor approved by THE BARRETT COMPANY in strict accordance with the above specification and subject to Barrett inspection and approval.

Condensed Specification

Roofing—Shall be a Barrett Specification Roof, Type "A", laid in accordance with the Barrett Specification (for use over precast gypsum slabs), by a roofing contractor approved by THE BARRETT COMPANY. The roofing contractor shall furnish THE BARRETT COMPANY'S Surety Bond Guaranty for fifteen (15) years, in accordance with Note No. 1 of said specification.

See Section No. 3 for Specifications and Details on Flashings.



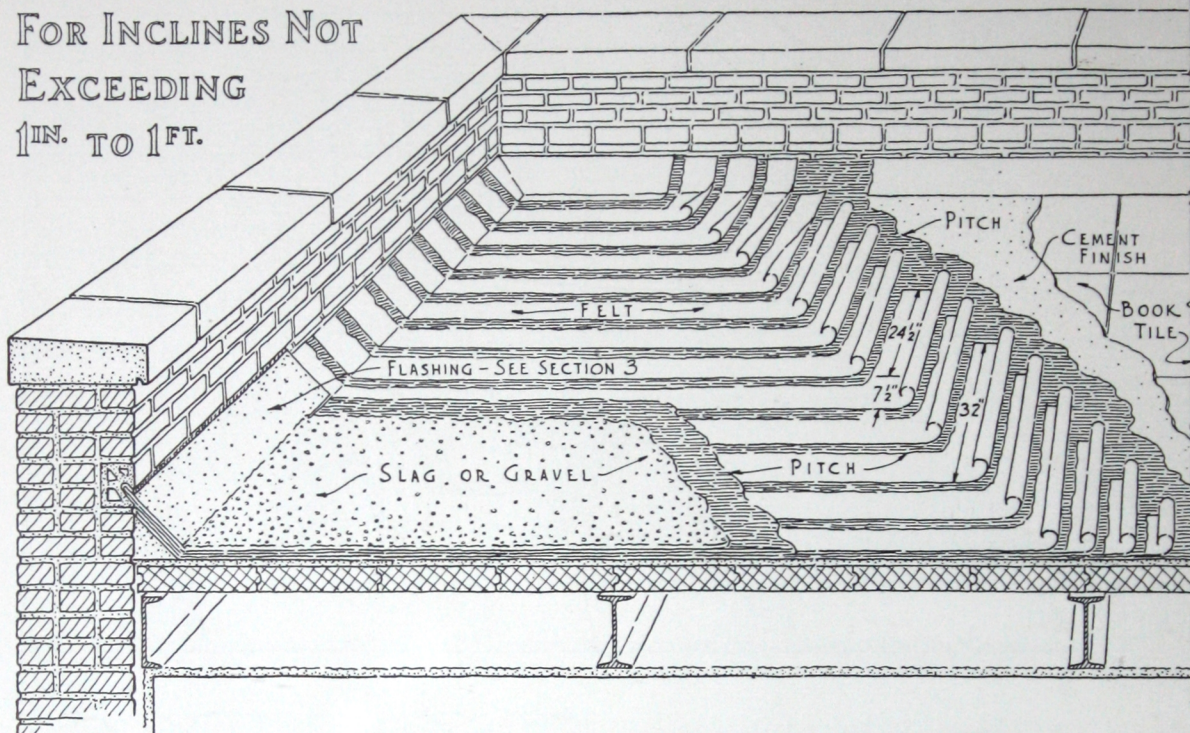


BARRETT SPECIFICATION ROOFS

20 YEAR GUARANTY BOND TYPE 'AA'
FOR USE OVER BOOK TILE



FOR INCLINES NOT
EXCEEDING
1 IN. TO 1 FT.



SPECIFICATION

The surface of the book tile shall be finished off with not less than one-half ($\frac{1}{2}$) inch of Portland cement mortar.

The roof deck shall be smooth, firm, dry and free from loose material. If roof deck is inclined, it shall be properly graded to outlets.

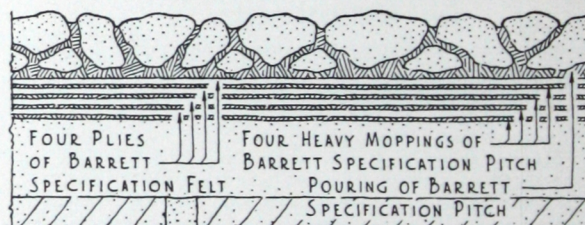
First—Coat the entire surface of the roof deck uniformly with Specification Pitch.

Second—Over the entire surface lay four (4) plies of Specification Tarred Felt, lapping each sheet twenty-four and one-half ($24\frac{1}{2}$) inches over preceding one, mopping with Specification Pitch the full twenty-four and one-half ($24\frac{1}{2}$) inches on each sheet, so that in no place shall Felt touch Felt.

Third—Over the entire surface pour from a dipper a uniform coating of Specification Pitch, into which, while hot, embed not less than four hundred (400) pounds of gravel or three hundred (300) pounds of slag for each one hundred (100) square feet. The gravel or slag shall be from one-quarter ($\frac{1}{4}$) inch to five-eighths ($\frac{5}{8}$) inch in size dry and free from dirt.

General—The Felt shall be laid without wrinkles or buckles. Not less than two hundred (200) pounds of Pitch shall be used for constructing each one hundred (100) square feet of completed roof, and the Pitch shall not be heated above four hundred (400) degrees Fahrenheit.

The roof shall be applied by a roofing contractor ap-



FULL SIZE SECTION

proved by THE BARRETT COMPANY. He shall furnish THE BARRETT COMPANY'S Surety Bond Guaranty issued by the U. S. Fidelity and Guaranty Company of Baltimore, covering a period of twenty (20) years from date of completion.

Note No. 1—THE BARRETT COMPANY will give its twenty (20) year Guaranty Bond on all jobs of five thousand (5000) square feet or more in the United States and Canada where its inspection service is available, provided the roof is applied by a roofing contractor approved by THE BARRETT COMPANY, in strict accordance with the above specification and subject to Barrett inspection and approval.

Condensed Specification

Roofing—Shall be a Barrett Specification Roof, Type "AA", laid in accordance with the Barrett Specification (for use over book tile), by a roofing contractor approved by THE BARRETT COMPANY. The roofing contractor shall furnish THE BARRETT COMPANY'S Surety Bond Guaranty for twenty (20) years in accordance with Note No. 1 of said specification.

See Section No. 3 for Specifications and Details on Flashings.

Barrett



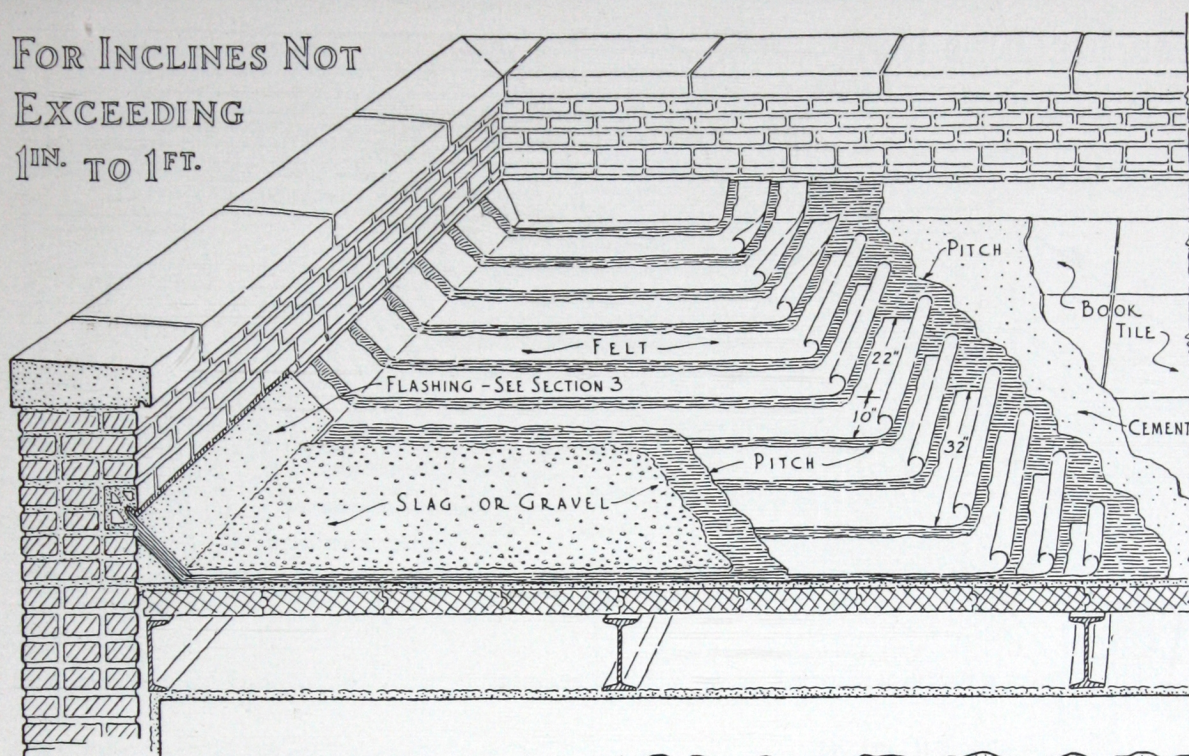
BARRETT SPECIFICATION ROOFS

15 YEAR GUARANTY BOND TYPE "A"

FOR USE OVER BOOK TILE



FOR INCLINES NOT
EXCEEDING
1 IN. TO 1 FT.



SPECIFICATION

The surface of the book tile shall be finished off with not less than one-half ($\frac{1}{2}$) inch of Portland cement mortar.

The roof deck shall be smooth, firm, dry and free from loose material. If roof deck is inclined, it shall be properly graded to outlets.

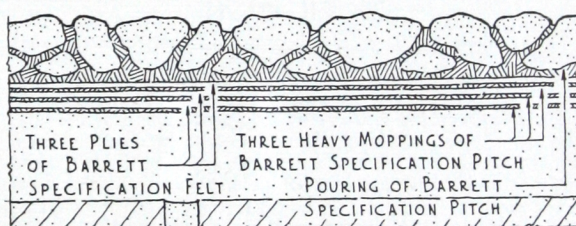
First—Coat the entire surface of the roof deck uniformly with Specification Pitch.

Second—Over the entire surface lay three (3) plies of Specification Tarred Felt, lapping each sheet twenty-two (22) inches, over preceding one, mopping with Specification Pitch the full twenty-two (22) inches on each sheet so that in no place shall Felt touch Felt.

Third—Over the entire surface pour from a dipper a uniform coating of Specification Pitch, into which, while hot, embed not less than four hundred (400) pounds of gravel or three hundred (300) pounds of slag for each one hundred (100) square feet. The gravel or slag shall be from one-quarter ($\frac{1}{4}$) inch to five-eighths ($\frac{5}{8}$) inch in size, dry and free from dirt.

General—The Felt shall be laid without wrinkles or buckles. Not less than one hundred and seventy-five (175) pounds of Pitch shall be used for constructing each one hundred (100) square feet of completed roof, and the Pitch shall not be heated above four hundred (400) degrees Fahrenheit.

The roof shall be applied by a roofing contractor ap-



FULL SIZE SECTION

proved by THE BARRETT COMPANY. He shall furnish THE BARRETT COMPANY'S Surety Bond Guaranty issued by the U. S. Fidelity and Guaranty Company of Baltimore, covering a period of fifteen (15) years from date of completion, in accordance with Note No. 1.

Note No. 1—THE BARRETT COMPANY will give its fifteen (15) year Guaranty Bond on all jobs of five thousand (5,000) square feet or more in the United States and Canada where its inspection service is available; provided the roof is applied by a roofing contractor approved by THE BARRETT COMPANY, in strict accordance with the above specification and subject to Barrett inspection and approval.

Condensed Specification

Roofing—Shall be a Barrett Specification Roof, Type "A", laid in accordance with the Barrett Specification (for use over book tile), by a roofing contractor approved by THE BARRETT COMPANY. The roofing contractor shall furnish THE BARRETT COMPANY'S Surety Bond Guaranty for fifteen (15) years in accordance with Note No. 1 of said specification.

See Section No. 3 for Specifications and Details on Flashings.

Barrett



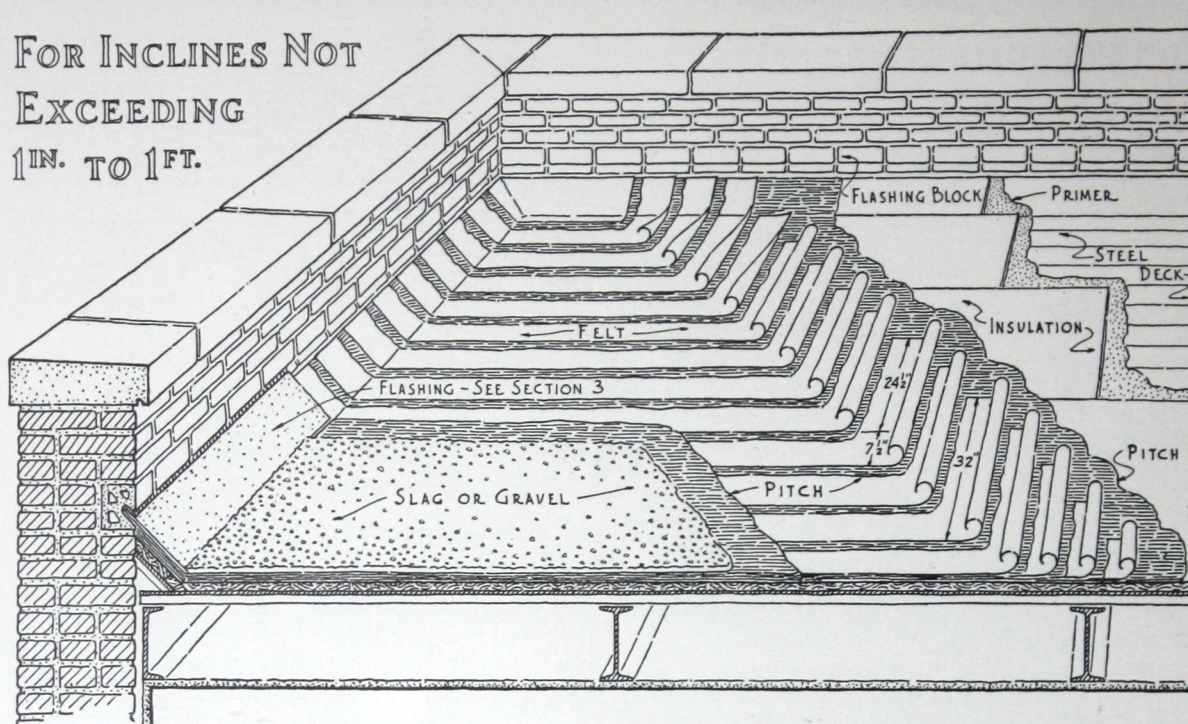
BARRETT SPECIFICATION ROOFS

20 YEAR GUARANTY BOND TYPE 'AA'

FOR USE OVER STEEL DECKS



FOR INCLINES NOT
EXCEEDING
1 IN. TO 1 FT.



SPECIFICATION

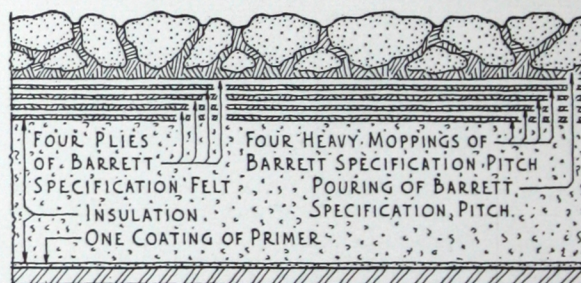
The roof deck shall be smooth, firm, dry and free from rust, grease or loose material. The weather surface shall be factory-primed to receive the roof covering. If roof deck is inclined it shall be properly graded to outlets.

First—Over the entire surface spread a uniform coating of Barrett Anchor Brand Roofing Asphalt into which, while hot, embed approved rigid roof insulation as specified. Insulation shall be kept and applied in a dry condition and shall be firm and free from defects or loose materials. Cut-offs consisting of two (2) plies of Barrett Waterproofing Fabric and three (3) moppings of Barrett Anchor Brand Roofing Asphalt shall be applied every twenty (20) feet, during the application of the insulation, and such cut-offs shall extend at least six (6) inches on roof deck and four (4) inches on top of insulation. No more insulation shall be applied than can be immediately covered with roofing. Care shall be taken that all ends are properly flashed so that at no time shall surface or edges of insulation be exposed.

Second—Coat the entire surface of the insulation with Specification Pitch.

Third—Over the entire surface lay four (4) plies of Specification Tarred Felt, lapping each sheet twenty-four and one-half (24 1/2) inches over preceding one, mopping with Specification Pitch the full twenty-four and one-half (24 1/2) inch lap, so that in no place shall Felt touch Felt. Each sheet shall be nailed three (3) inches from upper edge, with soft nosed nails of sufficient length to extend through the insulation and clinch. Nails to be spaced not more than two (2) feet apart.

Fourth—Over the entire surface pour from a dipper a uniform coating of Specification Pitch, in which, while hot, embed not less than four hundred (400) pounds of gravel or three hundred (300) pounds of slag for each one hundred (100) square feet. The gravel or slag shall be from one-quarter (1/4) inch to five-



eighths (5/8) inch in size, dry and free from dirt.

General—The Felt shall be laid without wrinkles or buckles. Not less than two hundred (200) pounds of Pitch shall be used for constructing each one hundred (100) square feet of completed roof, and the Pitch shall not be heated above four hundred (400) degrees F.

The roof shall be applied by a roofing contractor approved by THE BARRETT COMPANY. He shall furnish THE BARRETT COMPANY'S Surety Bond Guaranty issued by the U. S. Fidelity and Guaranty Company of Baltimore, covering a period of twenty (20) years from date of completion, in accordance with Note No. 1.

Note No. 1—THE BARRETT COMPANY will give its twenty (20) year Guaranty Bond on all jobs of five thousand (5000) square feet or more in the United States and Canada where its inspection service is available, provided the roof is applied by a roofing contractor approved by THE BARRETT COMPANY, in strict accordance with the above specification and subject to Barrett inspection and approval.

Condensed Specification

Roofing—Shall be a Barrett Specification Roof, Type "AA", laid in accordance with the Barrett Specification for use over steel roof decks, by a roofing contractor approved by THE BARRETT COMPANY. The roofing contractor shall furnish THE BARRETT COMPANY'S Surety Bond Guaranty for twenty (20) years, in accordance with Note No. 1 of said specification.

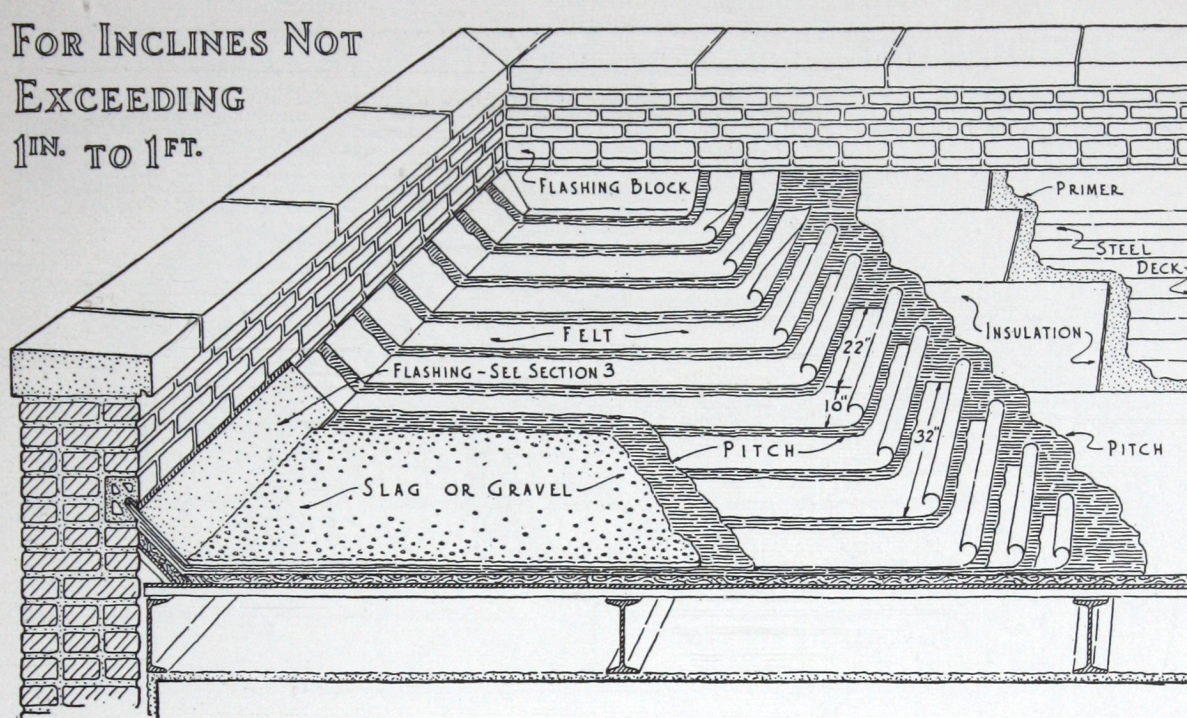
Barrett

BARRETT SPECIFICATION ROOFS

15 YEAR GUARANTY BOND TYPE 'A'

FOR USE OVER STEEL DECKS

FOR INCLINES NOT
EXCEEDING
1 IN. TO 1 FT.



SPECIFICATION

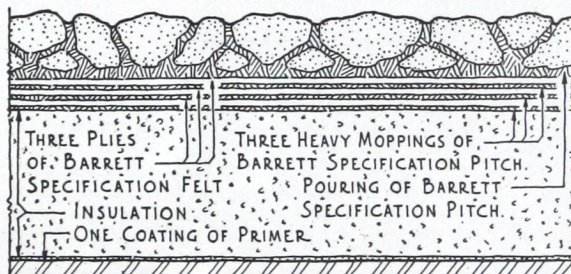
The roof deck shall be smooth, firm, dry and free from rust, grease, or loose material. The weather surface shall be factory-primed to receive the roof covering. If roof deck is inclined it shall be properly graded to outlets.

First—Over the entire surface spread a uniform coating of Barrett Anchor Brand Roofing Asphalt into which, while hot, embed approved rigid roof insulation as specified. Insulation shall be kept and applied in a dry condition and shall be firm and free from defects or loose materials. Cut-offs consisting of two (2) plies of Barrett Waterproofing Fabric and three (3) moppings of Barrett Anchor Brand Roofing Asphalt shall be applied every twenty (20) feet, during the application of the insulation, and such cut-offs shall extend at least six (6) inches on roof deck and four (4) inches on top of insulation. No more insulation shall be applied than can be immediately covered with roofing. Care shall be taken that ends are properly flashed so that at no time shall surface or edges of insulation be exposed.

Second—Coat the entire surface of the insulation with Specification Pitch.

Third—Over the entire surface lay three (3) plies of Specification Tarred Felt, lapping each sheet twenty-two (22) inches over preceding one, mopping with Specification Pitch the full twenty-two (22) inch lap, so that in no place shall felt touch felt. Each sheet shall be nailed three (3) inches from the upper edge with soft-nosed nails of sufficient length to extend through the insulation and clinch. Nails to be spaced not more than two (2) feet apart.

Fourth—Over the entire surface pour from a dipper a uniform coating of Specification Pitch, into which, while hot, embed not less than four hundred (400) pounds of gravel or three hundred (300) pounds of slag for each one hundred (100) square feet. The gravel or slag shall be from one-quarter (1/4) inch to



five-eighths (5/8) inch in size, dry and free from dirt.

General—The felt shall be laid without wrinkles or buckles. Not less than one hundred and seventy-five (175) pounds of Pitch shall be used for constructing each one hundred (100) square feet of completed roof, and the Pitch shall not be heated above four hundred (400) degrees F.

The roof shall be applied by a roofing contractor approved by THE BARRETT COMPANY. He shall furnish THE BARRETT COMPANY'S Surety Bond Guaranty issued by the U. S. Fidelity and Guaranty Company of Baltimore, covering a period of fifteen (15) years from date of completion, in accordance with Note No. 1.

Note No. 1—THE BARRETT COMPANY will give its fifteen (15) year Guaranty Bond on all jobs of five thousand (5,000) square feet or more in the United States and Canada where its inspection service is available, provided the roof is applied by a roofing contractor approved by THE BARRETT COMPANY in strict accordance with the above specification and subject to Barrett inspection and approval.

Condensed Specification

Roofing—Shall be a Barrett Specification Roof, Type "A", laid in accordance with the Barrett Specification for use over steel roof decks, by a roofing contractor approved by THE BARRETT COMPANY. The roofing contractor shall furnish THE BARRETT COMPANY'S Surety Bond Guaranty for fifteen (15) years, in accordance with Note No. 1 of said specification.

Barrett



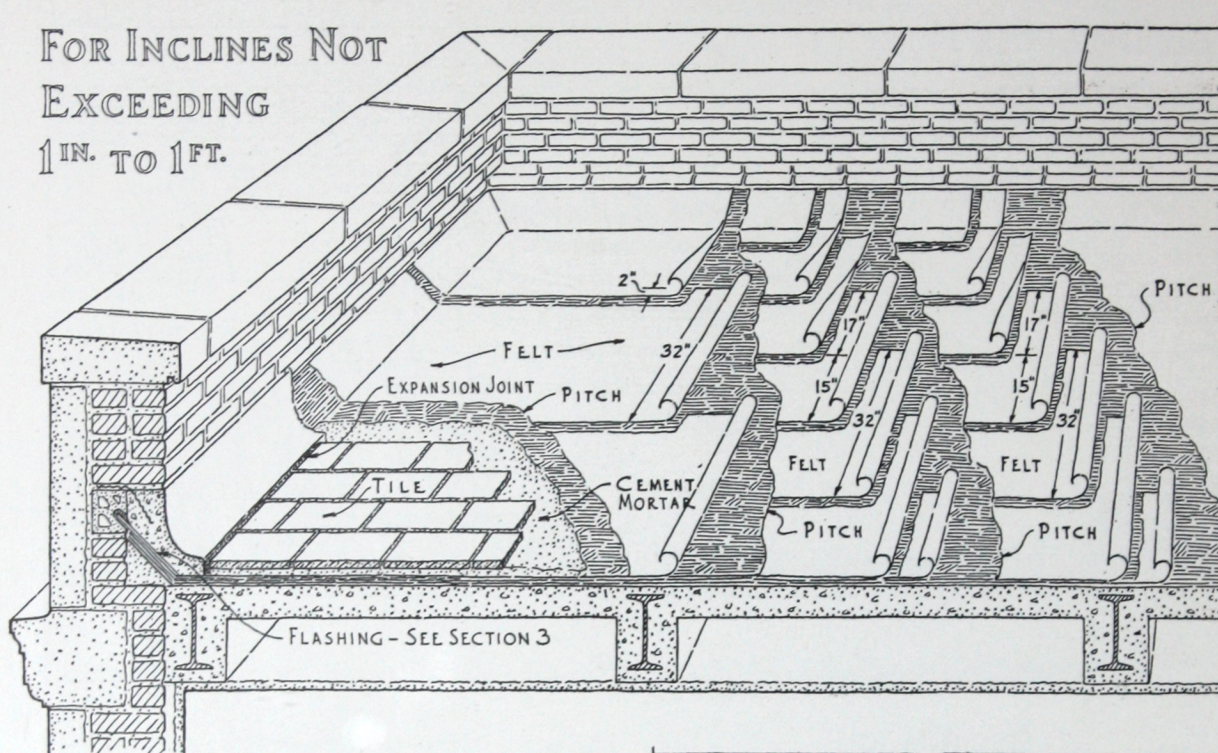
BARRETT SPECIFICATION ROOFS

5-PLY OVER CONCRETE

FOR USE UNDER PROMENADE TILE



FOR INCLINES NOT
EXCEEDING
1 IN. TO 1 FT.



SPECIFICATION

The roof deck shall be smooth, firm, dry, properly graded to outlets, and free from loose material.

First—Coat the concrete uniformly with Specification Pitch.

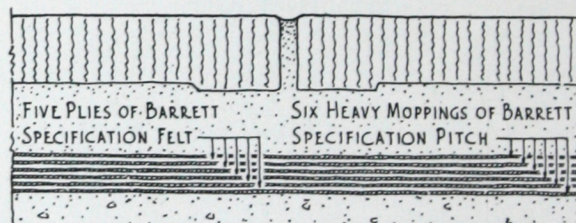
Second—Over the entire surface lay two (2) plies of Specification Tarred Felt, lapping each sheet seventeen (17) inches over preceding one, mopping with Specification Pitch the full seventeen (17) inch lap on each sheet, so that in no place shall Felt touch Felt.

Third—Coat the entire surface uniformly with Specification Pitch.

Fourth—Over the entire surface lay two (2) plies of Specification Tarred Felt, lapping each sheet seventeen (17) inches over preceding one, mopping with Specification Pitch the full seventeen (17) inch lap on each sheet, so that in no place shall Felt touch Felt.

Fifth—Immediately preceding the laying of the tile, thoroughly clean the surface of the roof and mop same with Specification Pitch, into which, while hot, embed one (1) layer of Specification Felt, lapping each sheet two (2) inches over preceding one. Over this surface and immediately preceding the laying of the tile spread a heavy uniform coating of Specification Pitch. No more of the roof surface shall be covered with the final or last ply of Felt and mopping of Pitch than is covered at the same time with tile and is necessary to allow for proper connections.

Over the Felt and Pitch roofing thus laid, 1 x 6 x 9-inch vitrified clay tile (approved by the architect) shall be set in not less than three-fourths ($\frac{3}{4}$) inch of Portland cement mortar (1 to 3 mix) and joints grouted full with Portland cement mortar (1 to 2 mix). The



HALF FULL SIZE SECTION

tile shall be laid to show three-sixteenths ($\frac{3}{16}$) inch to one-fourth ($\frac{1}{4}$) inch joints. Expansion joints three-fourths ($\frac{3}{4}$) inch wide filled with a plastic mixture (approved by the architect) shall be provided between the tile and all flashings, and either metal or mastic expansion joints shall be provided throughout the roof surface as may be necessary to take care of expansion. All expansion joints shall extend from the top of the tile through the cement mortar to the Felt and Pitch waterproofing and in no case shall expansion joints be spaced more than twenty (20) feet apart.

General—The Felt shall be laid without wrinkles or buckles. Not less than two hundred (200) pounds of Pitch shall be used for constructing each one hundred (100) square feet of completed roof, and the Pitch shall not be heated above four hundred (400) degrees Fahrenheit. The roofing contract shall be awarded to a roofing contractor, approved by THE BARRETT COMPANY, who has had experience in this kind of work, and who can refer to similar roofing where his work has proved satisfactory.

See Section No. 3 for Specifications and Details on Flashing.

Barrett

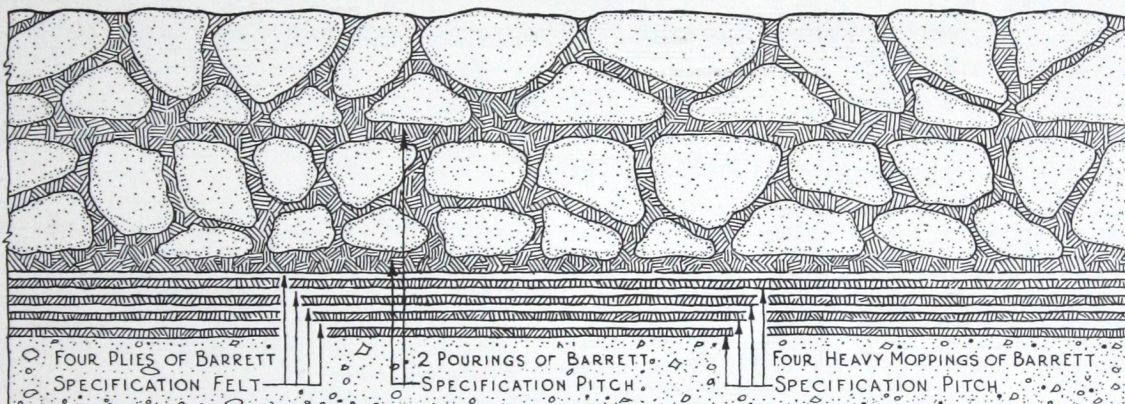
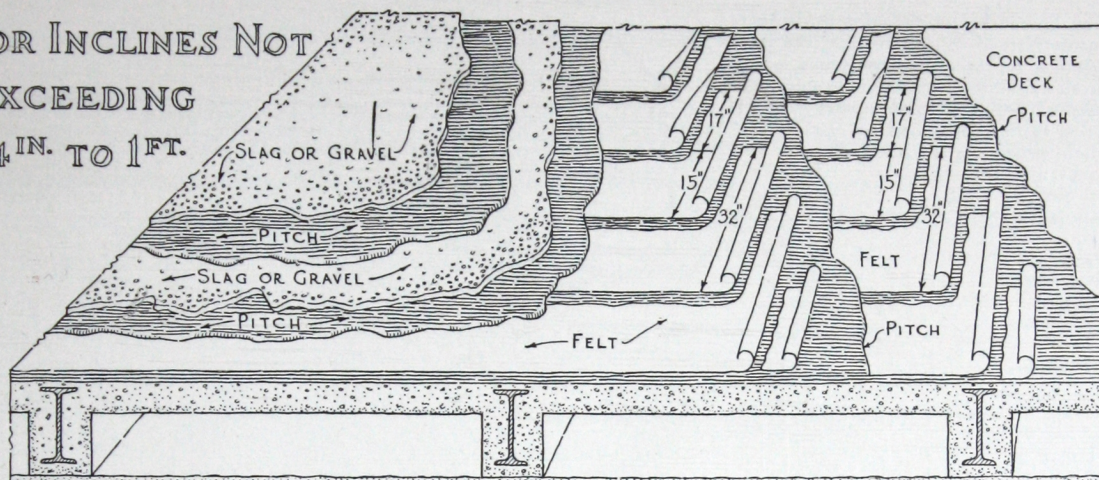


BARRETT SPECIFICATION ROOFS

4-PLY OVER CONCRETE
FOR SPRAY POND ROOFS



FOR INCLINES NOT
EXCEEDING
 $\frac{1}{4}$ IN. TO 1 FT.



FULL SIZE SECTION

SPECIFICATIONS

The roof deck shall be smooth, firm, dry, properly graded to outlets, and free from loose material.

First—Coat the concrete uniformly with Specification Pitch.

Second—Over the entire surface lay two (2) plies of Specification Tarred Felt, lapping each sheet seventeen (17) inches over preceding one, mopping with Specification Pitch the full seventeen (17) inch lap on each sheet, so that in no place shall Felt touch Felt.

Third—Coat the entire surface uniformly with Specification Pitch.

Fourth—Over the entire surface lay two (2) plies of Specification Tarred Felt, lapping each sheet seventeen (17) inches over preceding one, mopping with Specification Pitch the full seventeen (17) inch lap on each sheet, so that in no place shall Felt touch Felt.

Fifth—Immediately preceding the application of surfacing material, thoroughly clean the surface of the roofing, after which over the entire surface, pour from a dipper a uniform coating of Specification Pitch, into which, while hot, embed not less than four hundred

(400) pounds of gravel, or three hundred (300) pounds of slag for each one hundred (100) square feet.

Sixth—Remove all loose or excess gravel or slag by slightly sweeping all surfaces and immediately follow with hot pouring of Specification Pitch, applied to all surfaces, into which, while hot, embed not less than three hundred (300) pounds of gravel, or two hundred (200) pounds of slag for each one hundred (100) square feet. The gravel or slag shall be from one-quarter ($\frac{1}{4}$) to five-eighths ($\frac{5}{8}$) inch in size, dry and free from dirt. All gravel or slag shall be firmly embedded in Pitch so that no loose particles appear in finished job.

General—The Felt shall be laid without wrinkles or buckles. Not less than three hundred (300) pounds of Pitch shall be used for constructing each one hundred (100) square feet of completed roof, and the Pitch shall not be heated above four hundred (400) degrees F.

The roofing contract shall be awarded to a roofing contractor, approved by THE BARRETT COMPANY, who has had experience in this kind of work, and can refer to similar installations where his work has proved satisfactory.

Barrett



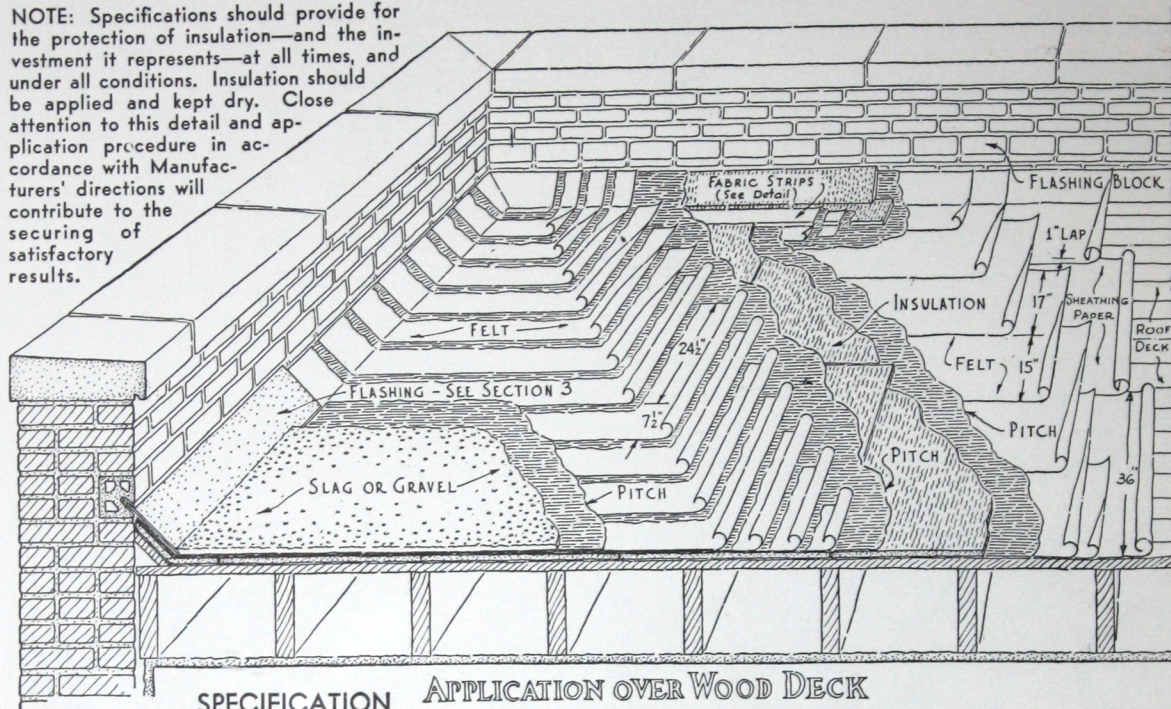
BARRETT SPECIFICATION ROOFS

TYPE 'A-A' OR TYPE 'A'

DETAILS FOR USE OVER RIGID INSULATION



NOTE: Specifications should provide for the protection of insulation—and the investment it represents—at all times, and under all conditions. Insulation should be applied and kept dry. Close attention to this detail and application procedure in accordance with Manufacturers' directions will contribute to the securing of satisfactory results.



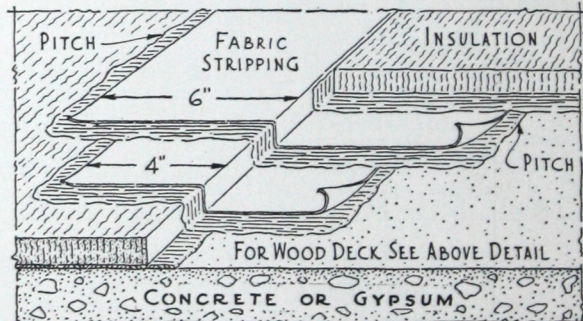
SPECIFICATION APPLICATION OVER WOOD DECK

ON WOOD ROOF DECKS, the installation of a waterproofing course, over which the insulation is applied, provides protection against moisture from below. The waterproofing course shall be of 2-ply construction; i.e., one layer of Rosin-sized sheathing and 2 plies of tarred felt, each sheet lapped 17 inches over preceding one, and nailed along lower edge sufficiently to hold in place. All nails shall be driven through flat tin discs and shall not extend to under side of deck. The entire surface of the waterproofing course shall be coated with a uniform mopping of pitch into which, while hot, the insulation shall be laid. OVER PRECAST SLABS, Rosin-sized sheathing may be omitted.

ON MONOLITHIC CONCRETE ROOF DECKS, the insulation may be laid in a hot mopping of pitch applied directly and fully to the roof deck surface or over a waterproofing course of 2-ply construction, stuck solid, and omitting Rosin-sized sheathing. The roof deck in all cases shall be smooth, firm, free from loose materials and shall be dry.

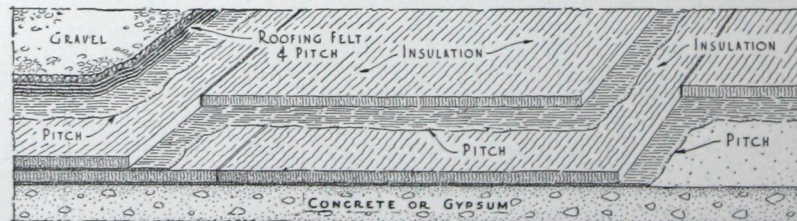
OVER INSULATION, all roofing shall be solid-mopped. (For specifications refer to pages 18 and 19.) Water cut-offs, consisting of 2 plies of Barrett Waterproofing Fabric and alternating moppings of pitch shall be installed at all edges of insulation adjoining parapet walls, curbs, or other vertical surfaces. Supplementary and continuous cut-offs of similar construction shall be installed approximately every 25 feet in each direction during application of insulation.

Note—1. Where multiple layers of insulation are installed, each succeeding layer shall break joints with underlying layer and shall be set in mopping of pitch.



APPLICATION DETAIL FOR ONE LAYER OF INSULATION.

METHOD OF INSTALLING WATER CUT-OFF



APPLICATION DETAIL FOR MULTIPLE LAYERS OF INSULATION

Note—2. Insulation shall be immediately covered with roofing and edges shall be stripped and sealed after each day's work.

Barrett

SECTION 2

Steep Roof Specifications and Details

ROOFs having inclines in excess of two inches in one foot are generally classified as steep roofs.

Such roofs are not ordinarily required to hold rain water, slush, ice and snow for protracted periods. They are, however, subjected to longer periods of exposure to the harmful actinic rays of the sun, and should be constructed so as to provide complete protection under all prevailing conditions.

Great care in construction and exacting inspection are desirable in steep roof work. The use of the proper materials and the proper application thereof are of paramount importance. Materials used in the construction of Barrett Built-Up roofs for steep surfaces are particularly suited to the requirements involved. Applied, they form a continuous waterproofing membrane which will

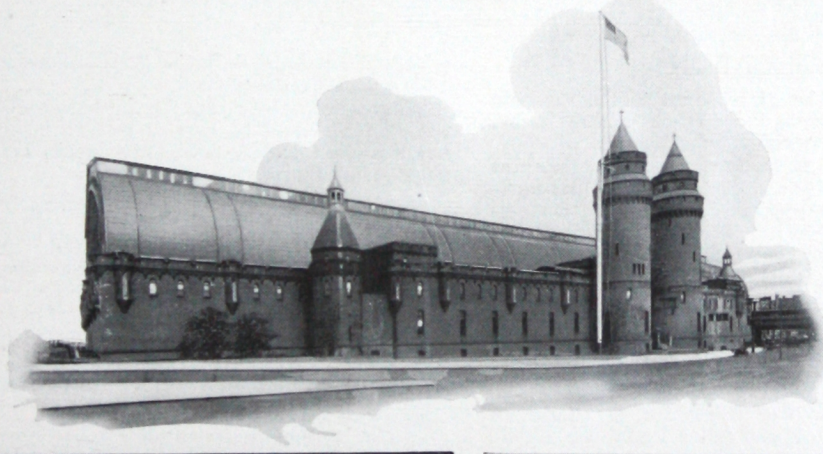
not slide or rupture under normal deck stress or strain.

Under no circumstances should membrane coverings be left unprotected or exposed to the weather. For this reason, consistent with Barrett's policy of providing the most durable weathering surface, Barrett's steep roof construction is protected by crushed slag or gravel, or by mineralized aggregate obtainable in a variety of colors.

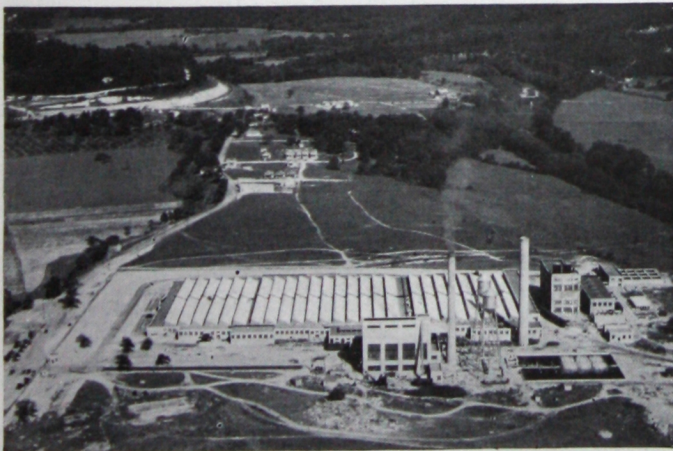
Barrett's approved roofing organization is skilled in the application of steep roof construction, and can be relied upon to handle this type of work with the same degree of efficiency as is obtained on all Barrett Specification work.

The following specifications are recommended for use under the specific conditions as outlined.

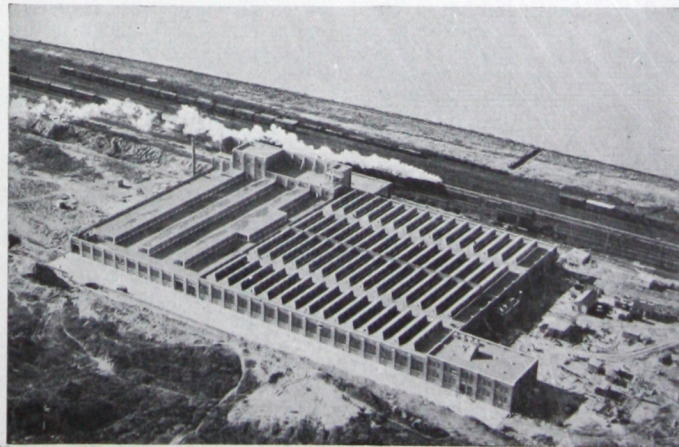
258th
Field Artillery
Armory
New York, N. Y.



A Typical
Barrett
Steep Roof
Application



Industrial Rayon Corporation, Covington, Ky.
Barrett Specification Roofed



National Biscuit Company, Beacon, N. Y.
Barrett Specification Roofed

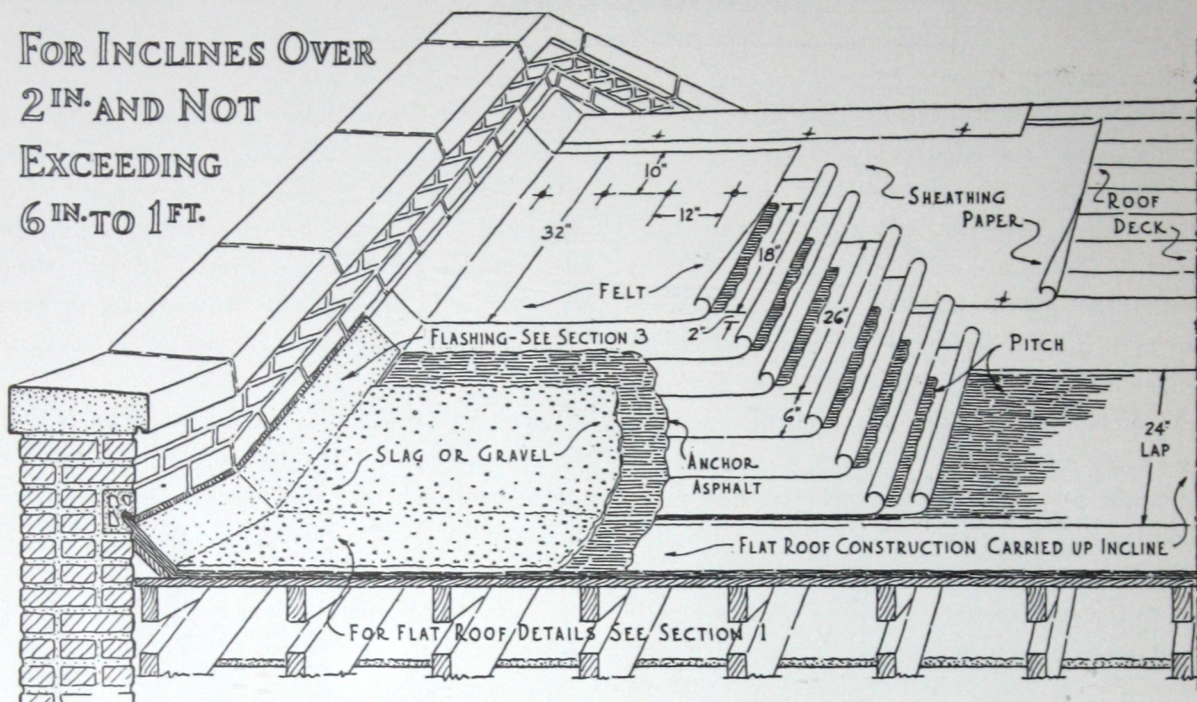


BARRETT SPECIAL STEEP ROOFS

10 YEAR GUARANTY BOND - 5 PLY
FOR USE OVER WOOD



FOR INCLINES OVER
2 IN. AND NOT
EXCEEDING
6 IN. TO 1 FT.



SPECIFICATION

The roof deck shall be of seasoned lumber, smooth and free from loose boards, large cracks or knot holes, and free from loose material.

First—Lay one (1) thickness of sheathing paper or unsaturated felt weighing not less than five (5) pounds per one hundred (100) square feet, lapping the sheets at least one (1) inch.

Second—Over the entire surface lay five (5) plies of Specification Tarred Felt at right angles to the incline of the roof, lapping each sheet twenty-six (26) inches over preceding one. Each sheet shall be nailed with one (1) inch barbed roofing nails through flat tin disks, ten (10) inches from the upper edge, nails to be spaced not more than one (1) foot apart.

Third—Mop back on each sheet for a distance of twenty (20) inches with Specification Pitch. Care shall be taken that pitch moppings are held back two (2) inches from the lower edge of each sheet, and that the finished felt surface shall be free of pitch drippage from the mopping bucket.

Fourth—Over the entire surface spread with a mop a uniform coating of Barrett Anchor Brand Roofing Asphalt, in which, while hot, embed not less than two hundred and fifty (250) pounds of slag for each one hundred (100) square feet. The slag shall be from one-quarter ($\frac{1}{4}$) to five-eighths ($\frac{5}{8}$) inch in size, dry and free from dirt. If roofing is applied during cool weather, or slag is damp, it shall be heated and dried. The slag shall be warm when applied to the roof. The finished surface shall be broomed clean of all loose slag.

General—Felt shall be laid without wrinkles or buckles. Not less than sixty (60) pounds of pitch and not less than forty (40), nor more than fifty (50), pounds of asphalt shall be used for constructing each one hundred (100) square feet of completed roof. The

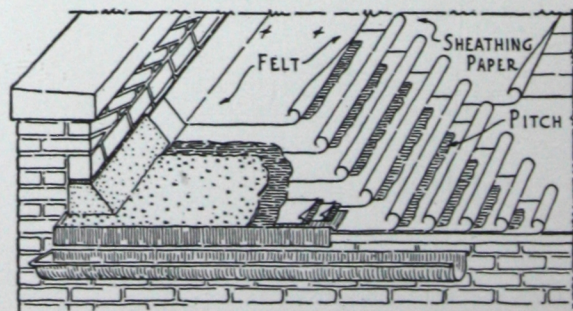
pitch and asphalt shall not be heated above four hundred (400) degrees Fahrenheit.

Where steep roofs join flat roofs, the roofing on the flat surfaces shall be carried up the inclined surfaces not less than twenty-four (24) inches before the application of the steep roofing.

The roof shall be applied by a roofing contractor approved by THE BARRETT COMPANY. He shall furnish THE BARRETT COMPANY'S Surety Bond Guaranty issued by the U. S. Fidelity and Guaranty Company of Baltimore, covering a period of ten (10) years from date of completion in accordance with Note No. 1.

Note No. 1—THE BARRETT COMPANY will give its ten year Guaranty Bond on jobs in the United States and Canada where its inspection service is available provided the roof is applied by a roofing contractor approved by THE BARRETT COMPANY in strict accordance with the above specification and subject to Barrett inspection and approval under the following conditions:

- (a) That the steep roof area shall be roofed in conjunction with the flat roof area.
- (b) That the flat roof area shall be covered with a Barrett Specification Type "A" or Type "AA" roof.



METHOD OF STARTING AT EAVES





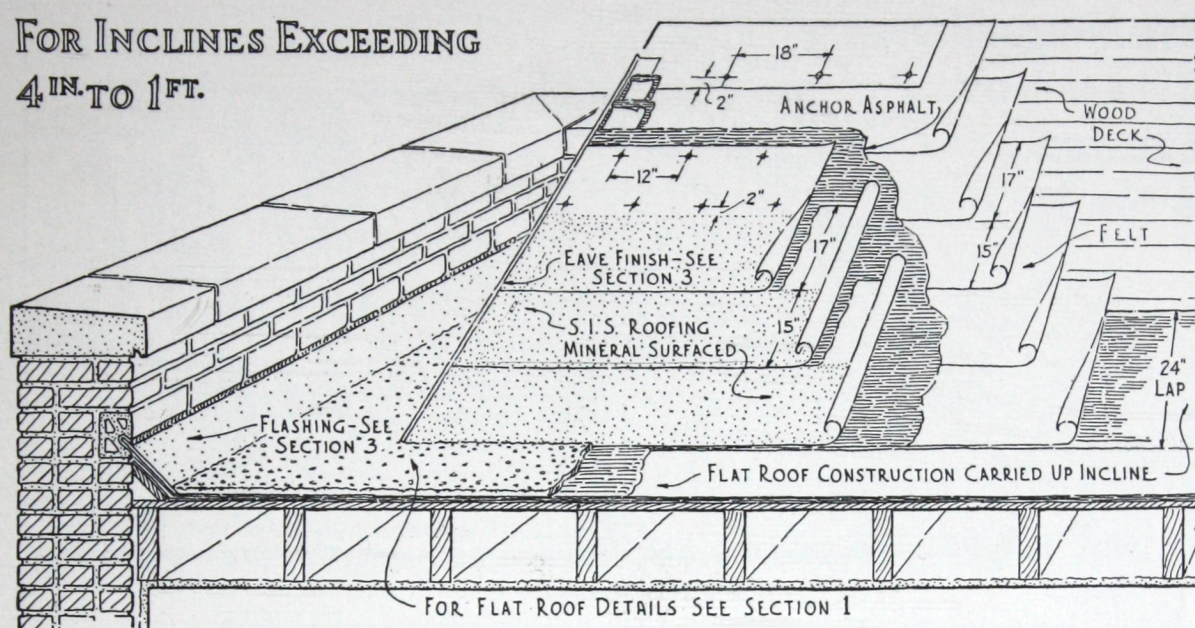
BARRETT SPECIAL STEEP ROOFS

S.I.S. TYPE 10 YEAR GUARANTY BOND

FOR USE OVER WOOD



FOR INCLINES EXCEEDING
4 IN. TO 1 FT.



FOR FLAT ROOF DETAILS SEE SECTION 1

SPECIFICATION

The roof deck shall be of seasoned lumber, smooth and free from loose boards, large cracks or knot holes, and free from loose material.

First—Over the entire surface lay two (2) plies of Specification Tarred Felt at right angles to the incline of the roof, lapping each sheet seventeen (17) inches over preceding one. Each sheet shall be nailed two (2) inches from the lower edge with barbed roofing nails, through flat tin disks, spacing the nails not more than eighteen (18) inches apart.

Second—Over the entire surface spread with a mop a uniform coating of Barrett Anchor Brand Roofing Asphalt, into which, while hot, shall be immediately rolled Barrett S. I. S. Roofing laid at right angles to the incline of the roof, lapping the sheets the full width of the seventeen (17) inch selvage. All sheets of Barrett S. I. S. Roofing shall be securely fastened in place with a double course of one (1) inch barbed roofing nails driven through flat tin disks, and placed along the selvage side of the sheet. Nailing courses to be staggered and nails to be spaced not more than twelve (12) inches apart. The lower nailing course shall be held back two (2) inches from the mineral surfacing.

Third—Spread over the entire surface of the seventeen (17) inch selvage a uniform mopping of Barrett Anchor Brand Roofing Asphalt, into which, while hot, shall be immediately rolled the following sheet of Barrett S. I. S. Roofing.

Fourth—All end laps shall be over-lapped at least six (6) inches. The underlying sheet of each end lap shall be nailed with six (6) nails through flat tin disks spaced five (5) inches apart starting one (1) inch from the lower edge of the sheet. The six (6) inch lap shall be coated with Barrett Anchor Brand Roofing Asphalt and the over-lapping sheet thoroughly pressed down.

Fifth—The Barrett S. I. S. Roofing shall be cut in strips not to exceed twenty (20) feet in length and shall be stacked flat in piles at least twenty-four (24) hours before using.

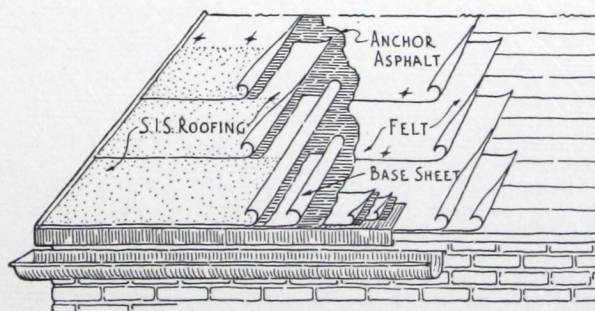
General—The felt and S. I. S. Roofing shall be laid without wrinkles or buckles. Not less than fifty (50) pounds of Barrett Anchor Brand Roofing Asphalt shall be used for constructing each one hundred (100) square feet of completed roof.

Where steep roofs join flat roofs, the roofing on the flat surfaces shall be carried up the inclined surfaces not less than twenty-four (24) inches before the application of the steep roofing.

The roof shall be applied by a roofing contractor approved by THE BARRETT COMPANY. He shall furnish THE BARRETT COMPANY'S Surety Bond Guaranty issued by the U. S. Fidelity and Guaranty Company of Baltimore, covering a period of ten (10) years from date of completion in accordance with Note No. 1.

Note No. 1—THE BARRETT COMPANY will give its ten year Guaranty Bond on jobs in the United States and Canada where its inspection service is available provided the roof is applied by a roofing contractor approved by THE BARRETT COMPANY in strict accordance with the above specification and subject to Barrett inspection and approval under the following conditions:

- (a) That the steep roof area shall be roofed in conjunction with the flat roof area.
- (b) That the flat roof area shall be covered with a Barrett Specification Type "A" or Type "AA" roof.



METHOD OF STARTING AT EAVES



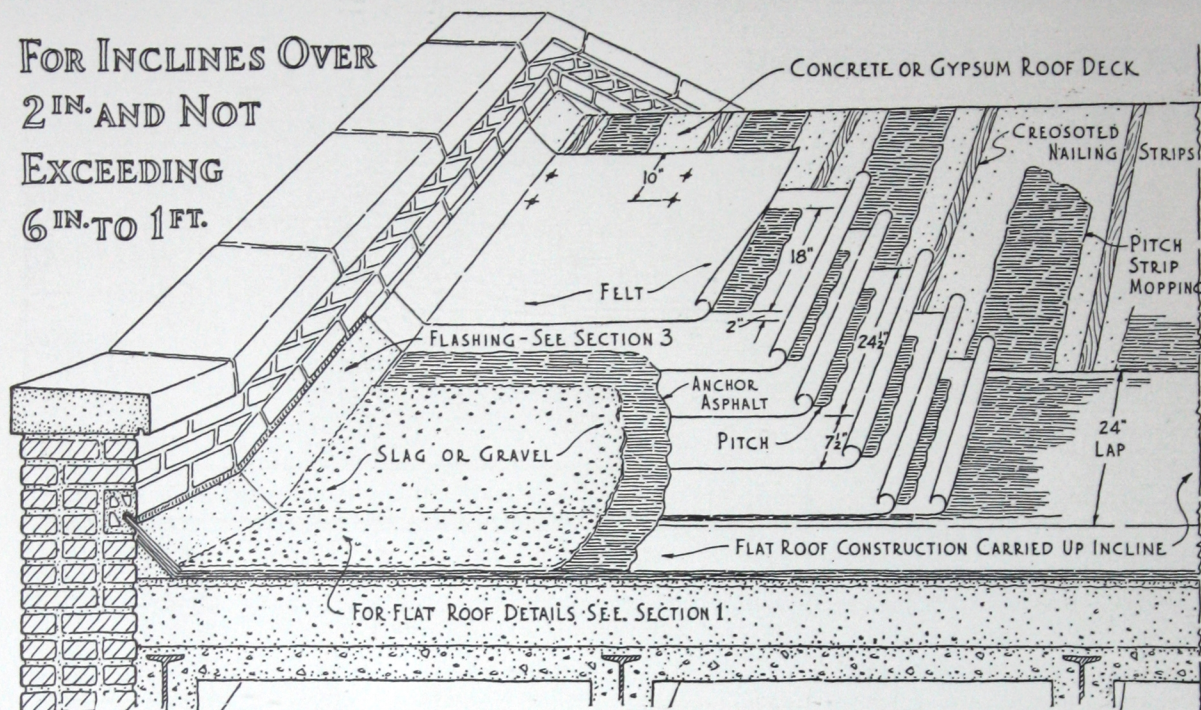


BARRETT SPECIAL STEEP ROOFS

10 YEAR GUARANTY BOND 4 PLY
FOR USE OVER POURED CONCRETE OR GYPSUM



FOR INCLINES OVER
2 IN. AND NOT
EXCEEDING
6 IN. TO 1 FT.



SPECIFICATION

The roof deck shall be smooth, firm, dry and free from loose material. The concrete or gypsum shall permit of nailing or creosoted wooden nailing strips shall be provided. If nailing strips are provided, they shall be laid parallel with the incline of the roof and shall be spaced not more than three (3) feet apart.

First—Strip mop the surface of the concrete or gypsum deck with Specification Pitch. Strip moppings shall run parallel with the incline of the roof and shall be not less than twelve (12) inches, nor more than eighteen (18) inches wide. The distance between each shall not exceed double the width of the mopping.

Second—Over the entire surface lay four (4) plies of Specification Tarred Felt at right angles to the incline of the roof, lapping each sheet twenty-four and one-half (24½) inches over preceding one. Each sheet shall be nailed with one (1) inch barbed roofing nails through flat tin disks ten (10) inches from the upper edge, nails to be spaced not more than one (1) foot apart. If nailing strips are used, the felt shall be nailed with two (2) nails, through flat tin disks (at each nailing strip) placed eight (8) and ten (10) inches respectively from the upper edge of each sheet.

Third—Mop back on each sheet for a distance of twenty (20) inches with Specification Pitch. Care shall be taken so that pitch moppings are held back two (2) inches from the lower edge of each sheet and that the finished felt surface shall be free of pitch drippage from the mopping bucket.

Fourth—Over the entire surface spread with a mop a uniform coating of Barrett Anchor Brand Roofing Asphalt, into which, while hot, embed not less than two hundred fifty (250) pounds of slag for each one hundred (100) square feet. The slag shall be from one-quarter (¼) to five-eighths (⅝) inch in size, dry and free from dirt. If roofing is applied during cool weather, or slag is damp, it shall be heated and dried.

The slag shall be warm when applied to the roof. The finished surface shall be broomed clean of all loose slag.

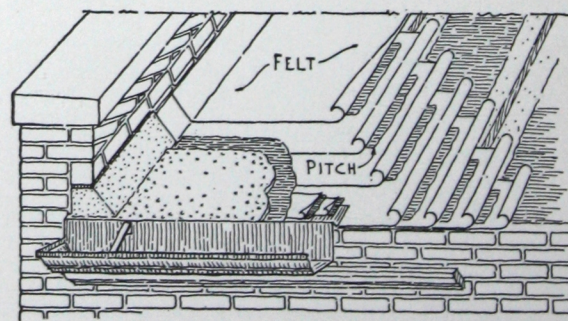
General—Felt shall be laid without wrinkles or buckles. Not less than sixty-five (65) pounds of pitch and not less than forty (40), nor more than fifty (50), pounds of asphalt shall be used for constructing each one hundred (100) square feet of completed roof. The pitch and asphalt shall not be heated above four hundred (400) degrees F.

Where steep roofs join flat roofs, the roofing on the flat surfaces shall be carried up the inclined surfaces not less than twenty-four (24) inches before application of steep roofing.

The roof shall be applied by a roofing contractor approved by THE BARRETT COMPANY. He shall furnish THE BARRETT COMPANY'S Surety Bond Guaranty issued by the U. S. Fidelity & Guaranty Company of Baltimore, covering a period of ten (10) years from date of completion in accordance with Note No. 1.

Note No. 1—THE BARRETT COMPANY will give its ten year Guaranty Bond on jobs in the United States and Canada where its inspection service is available provided the roof is applied by a roofing contractor approved by THE BARRETT COMPANY in strict accordance with the above specification and subject to Barrett inspection and approval under the following conditions:

- That the steep roof area be roofed in conjunction with the flat roof area.
- That the flat roof area shall be covered with a Barrett Specification Type "A" or Type "AA" roof.



METHOD OF STARTING AT EAVES

Barrett

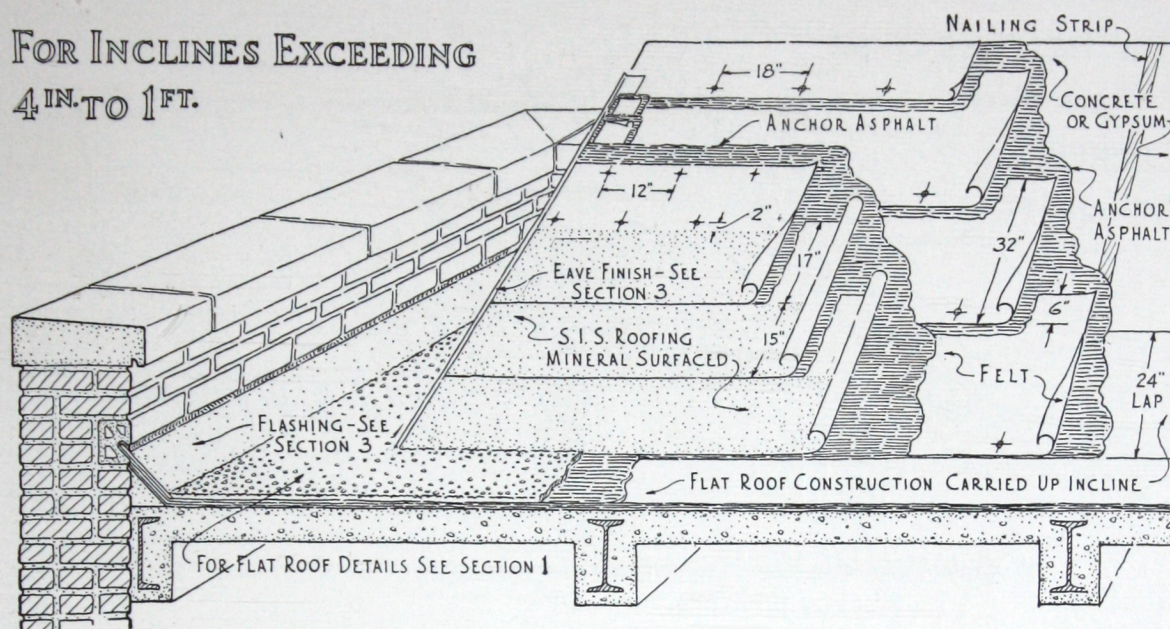


BARRETT SPECIAL STEEP ROOFS

S.I.S. TYPE-10 YEAR GUARANTY BOND
FOR USE OVER POURED CONCRETE OR GYPSUM



FOR INCLINES EXCEEDING
4 IN. TO 1 FT.



SPECIFICATION

The roof deck shall be smooth, firm, dry and free from loose material. The concrete or gypsum shall permit of nailing or creosoted wooden nailing strips shall be provided. If nailing strips are provided, they shall be laid parallel with the incline of the roof and shall be spaced not more than three (3) feet apart.

First—The surface of the roof deck shall be given a priming coat of Barrett Crystal Asphalt Primer. The priming coat shall be allowed to dry for not less than six (6) hours before the application of the roofing.

Second—Over the roof deck spread with a mop a uniform coating of Barrett Anchor Brand Roofing Asphalt, into which, while hot, shall be immediately embedded one (1) ply of Specification Tarred Felt, laid at right angles to the incline of the roof, lapping each sheet six (6) inches over preceding one. The six (6) inch over-lap shall be thoroughly cemented together with Barrett Anchor Brand Roofing Asphalt. The felt shall be nailed two (2) inches from the lower edge of each sheet, with barbed roofing nails through flat tin disks, spaced not more than eighteen (18) inches apart.

Third—Over the entire surface spread a uniform mopped coating of Barrett Anchor Brand Roofing Asphalt, into which, while hot, shall be immediately rolled Barrett S. I. S. Roofing laid at right angles to incline of roof, lapping the sheets the full width of the seventeen (17) inch selvage. All sheets of S. I. S. Roofing shall be securely fastened in place with a double course of one (1) inch barbed roofing nails driven through flat tin disks, and placed along the selvage side of sheet. Nailing courses to be staggered and nails spaced not more than twelve (12) inches apart. Lower nailing course shall be held back two (2) inches from the mineral surfacing.

Fourth—Spread over the entire surface of the seventeen (17) inch selvage, a uniform mopping of Barrett Anchor Brand Roofing Asphalt, into which shall be immediately rolled the following sheet of S. I. S. Roofing.

Fifth—All end laps shall be over-lapped at least six (6) inches. The underlying sheet of each end lap shall

be nailed along end of sheet with six (6) nails through flat tin disks spaced evenly. The six (6) inch lap shall be coated with Barrett Anchor Brand Roofing Asphalt and the over-lapping sheet thoroughly pressed down.

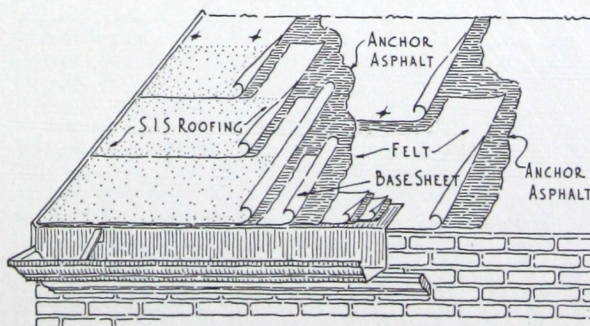
Sixth—S. I. S. Roofing shall be cut in strips not to exceed twenty (20) feet in length and shall be stacked flat in piles at least twenty-four (24) hours before using.

General—The felt and S. I. S. Roofing shall be laid without wrinkles or buckles. Not less than one hundred (100) pounds of Barrett Anchor Brand Roofing Asphalt shall be used for constructing each one hundred (100) square feet of completed roof. Where steep roofs join flat roofs, the roofing on the flat surfaces shall be carried up the inclined surfaces not less than twenty-four (24) inches before the application of the steep roofing.

The roof shall be applied by a roofing contractor approved by THE BARRETT COMPANY. He shall furnish THE BARRETT COMPANY'S Surety Bond Guaranty issued by the U. S. Fidelity & Guaranty Company of Baltimore, covering a period of ten (10) years from date of completion.

Note No. 1—THE BARRETT COMPANY will give its ten year Guaranty Bond on jobs in the United States and Canada where its inspection service is available provided the roof is applied by a roofing contractor approved by THE BARRETT COMPANY in strict accordance with the above specification and subject to Barrett inspection and approval under the following conditions:

- That steep roof area be roofed in conjunction with flat area.
- That the flat roof area shall be covered with a Barrett Specification Type "A" or Type "AA" roof.



METHOD OF STARTING AT EAVES



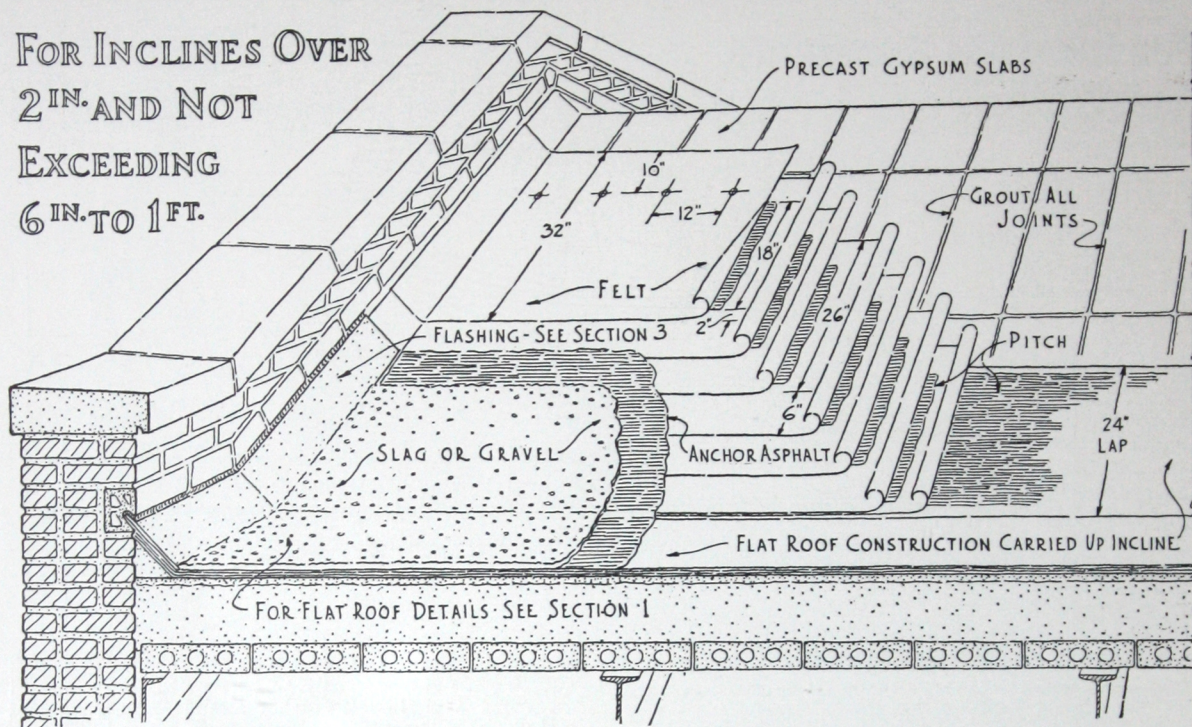


BARRETT SPECIAL STEEP ROOFS

10 YEAR GUARANTY BOND - 5 PLY
FOR USE OVER PRECAST GYPSUM SLABS



FOR INCLINES OVER
2 IN. AND NOT
EXCEEDING
6 IN. TO 1 FT.



SPECIFICATION

All joints between precast gypsum slabs shall be properly grouted. The roof deck shall be smooth, firm, dry and free from loose material.

First—Over the entire surface lay five (5) plies of Specification Tarred Felt at right angles to the incline of the roof, lapping each twenty-six (26) inches over preceding one. Each sheet shall be nailed with one (1) inch barbed roofing nails, through flat tin disks, ten (10) inches from the upper edge, nails to be spaced not more than one (1) foot apart.

Second—Mop back on each sheet for a distance of twenty (20) inches with Specification Pitch. Care should be taken that pitch moppings are held back two (2) inches from the lower edge of each sheet, and that the finished felt surface shall be free of pitch drippage from the mopping bucket.

Third—Over the entire surface spread with a mop a uniform coating of Barrett Anchor Brand Roofing Asphalt, in which, while hot, embed not less than two hundred fifty (250) pounds of slag for each one hundred (100) square feet. The slag shall be from one-quarter ($\frac{1}{4}$) to five-eighths ($\frac{5}{8}$) inch in size, dry and free from dirt. If roofing is applied during cool weather or slag is damp, it shall be heated and dried. The slag shall be warm when applied to the roof. The finished surface shall be broomed clean of all loose slag.

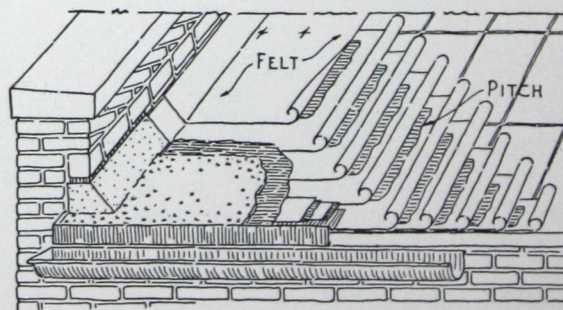
General—Felt shall be laid without wrinkles or buckles. Not less than sixty (60) pounds of pitch and not less than forty (40), nor more than fifty (50), pounds of asphalt shall be used for constructing each one hundred (100) square feet of completed roof. The pitch and asphalt shall not be heated above four hundred (400) degrees Fahrenheit.

Where steep roofs join flat roof, the roofing on the flat surfaces shall be carried up the inclined surfaces not less than twenty-four (24) inches before the application of the steep roofing.

The roof shall be applied by a roofing contractor approved by THE BARRETT COMPANY. He shall furnish THE BARRETT COMPANY'S Surety Bond Guaranty issued by the U. S. Fidelity & Guaranty Company of Baltimore, covering a period of ten (10) years from date of completion in accordance with Note No. 1.

Note No. 1—THE BARRETT COMPANY will give its ten year Guaranty Bond on jobs in the United States and Canada where its inspection service is available provided the roof is applied by a roofing contractor approved by THE BARRETT COMPANY in strict accordance with the above specification and subject to Barrett inspection and approval under the following conditions:

- That the steep roof area shall be roofed in conjunction with the flat roof area.
- That the flat roof area shall be covered with a Barrett Specification Type "A" or Type "AA" roof.



METHOD OF STARTING AT EAVES

Barrett



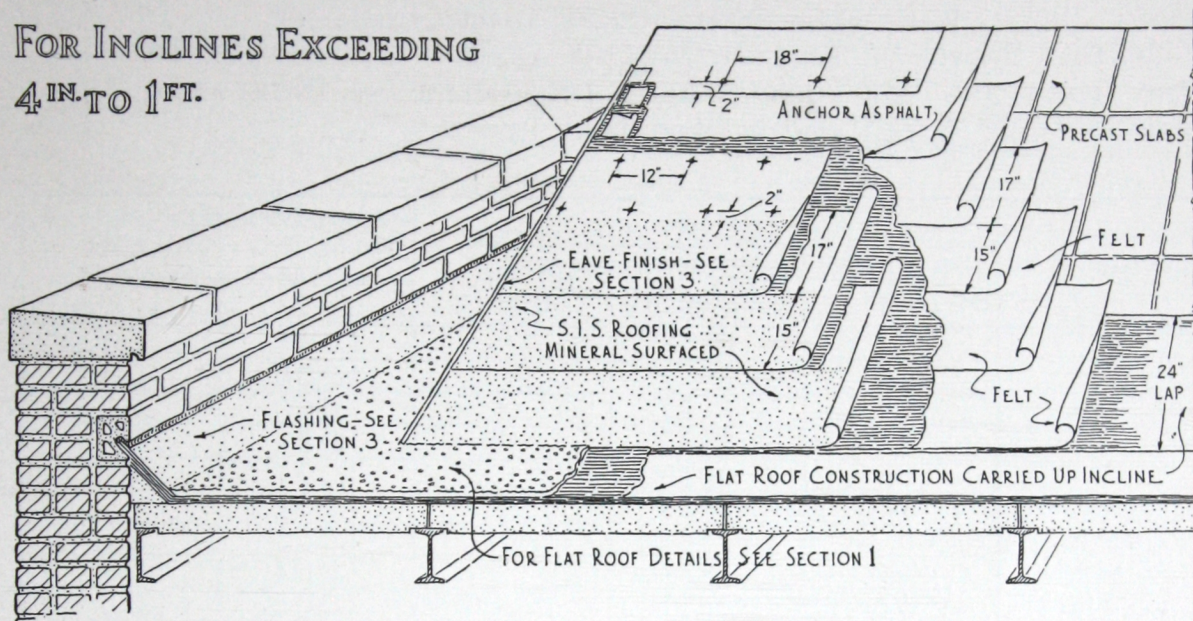
BARRETT SPECIAL STEEP ROOFS

S.I.S. TYPE 10 YEAR GUARANTY BOND

FOR USE OVER PRECAST GYPSUM SLABS



FOR INCLINES EXCEEDING
4 IN. TO 1 FT.



SPECIFICATION

All joints between precast gypsum slabs shall be properly grouted. The roof deck shall be smooth, firm, dry and free from loose material. The gypsum shall permit of nailing or creosoted wooden nailing strips shall be provided. If nailing strips are provided, they shall be parallel with the incline of the roof and shall be spaced not more than three (3) feet apart.

First—Over the entire surface lay two (2) plies of Specification Tarred Felt at right angles to the incline of roof, lapping each sheet seventeen (17) inches over preceding one. Each sheet shall be nailed two (2) inches from lower edge with barbed roofing nails, through flat tin disks, spaced not more than eighteen (18) inches.

Second—Over the entire surface spread with a mop a uniform coating of Barrett Anchor Brand Roofing Asphalt, into which, while hot, shall be immediately rolled Barrett S. I. S. Roofing laid at right angles to the incline of the roof, lapping the sheets the full width of the seventeen (17) inch selvage. All sheets of Barrett S. I. S. Roofing shall be securely fastened in place with a double course of one and one-half (1½) inch barbed roofing nails driven through flat tin disks, and placed along the selvage side of the sheet. Nailing courses to be staggered and nails to be spaced not more than twelve (12) inches apart. The lower nailing course shall be held back two (2) inches from the mineral surfacing.

Third—Spread over the entire surface of the seventeen (17) inch selvage a uniform mopping of Barrett Anchor Brand Roofing Asphalt, into which, while hot, shall be immediately rolled the following sheet of Barrett S. I. S. Roofing.

Fourth—All end laps shall be over-lapped at least six (6) inches. The underlying sheet of each end lap shall be nailed with six (6) nails through flat tin disks spaced five (5) inches apart starting one (1) inch from the lower edge of the sheet. The six (6) inch lap shall be coated with Barrett Anchor Brand Roofing Asphalt and the over-lapping sheet thoroughly pressed down.

Fifth—The Barrett S. I. S. Roofing shall be cut in strips not to exceed twenty (20) feet in length and

shall be stacked flat in piles at least twenty-four (24) hours before using.

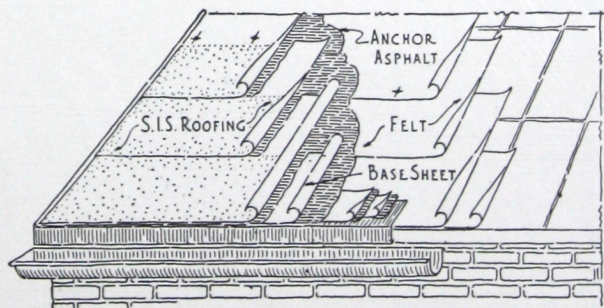
General—The felt and S. I. S. Roofing shall be laid without wrinkles or buckles. Not less than fifty (50) pounds of Barrett Anchor Brand Roofing Asphalt shall be used for constructing each one hundred (100) square feet of completed roof.

Where steep roofs join flat roofs, the roofing on the flat surfaces shall be carried up the inclined surfaces not less than twenty-four (24) inches before the application of the steep roofing.

The roof shall be applied by a roofing contractor approved by THE BARRETT COMPANY. He shall furnish THE BARRETT COMPANY'S Surety Bond Guaranty issued by the U. S. Fidelity & Guaranty Co. of Baltimore, covering a period of (10) years from date of completion.

Note No. 1—THE BARRETT COMPANY will give its ten year Guaranty Bond on jobs in the United States and Canada where its inspection service is available provided the roof is applied by a roofing contractor approved by THE BARRETT COMPANY in strict accordance with the above specification and subject to Barrett inspection and approval under the following conditions:

- That the steep roof area shall be roofed in conjunction with the flat roof area.
- That the flat roof area shall be covered with a Barrett Specification Type "A" or Type "AA" roof.



METHOD OF STARTING AT EAVES





BARRETT SPECIFICATION ROOFS

ROOF CONSTRUCTION DATA



THIS TABLE SHOWS THE RISE OR INCLINE OF ROOFS IN INCHES; DEGREES AND FRACTIONS PER FOOT. IT ALSO INDICATES THE INCREASED AREA PER SQ. FT. OF STEEP ROOFS OVER FLAT ROOFS.

Classification	Incline			Inclined Area Per Sq. Foot Horizontal Area	Percentage Increase In Area Over Flat Roof
	Inch Per Foot Horizontal	Angle With Horizontal	Fractional Factor		
Flat Roofs	1/8	0°-36'		1.000	0.0
	1/4	1°-12'		1.000	0.0
	3/8	1°-47'		1.000	0.0
	1/2	2°-23'	1/48	1.001	0.1
	5/8	2°-59'		1.001	0.1
	3/4	3°-35'	1/32	1.002	0.2
	1	4°-46'	1/24	1.003	0.3
	1 1/8	5°-21'		1.004	0.4
	1 1/4	5°-57'		1.005	0.5
	1 1/2	7°-8'	1/16	1.008	0.8
	1 3/4	8°-18'		1.011	1.1
	2	9°-28'	1/12	1.014	1.4
Steep Roofs	2 1/4	10°-37'		1.017	1.7
	2 1/2	11°-46'		1.021	2.1
	2 3/4	12°-54'		1.026	2.6
	3	14°-2'	1/8	1.031	3.1
	3 1/4	15°-9'		1.036	3.6
	3 1/2	16°-16'		1.042	4.2
	3 3/4	17°-21'		1.048	4.8
	4	18°-26'	1/6	1.054	5.4
	4 1/4	19°-30'		1.061	6.1
	4 1/2	20°-34'		1.068	6.8
	5	22°-37'		1.083	8.3
	6	26°-34'	1/4	1.118	11.8
	7	30°-16'		1.158	15.8
	8	33°-42'	1/3	1.202	20.2
	9	36°-52'		1.250	25.0
	10	39°-48'		1.302	30.2
	11	42°-31'		1.356	35.6
	12	45°-0'	1/2	1.414	41.4
Extra Steep Roofs	14	49°-24'		1.537	53.7
	16	53°-8'		1.667	66.7
	18	56°-19'		1.803	80.3
	20	59°-2'		1.943	94.3
	22	61°-23'		2.088	108.8
	24	63°-26'	1	2.235	123.5

Barrett

SECTION 3

Roof Flashing Specifications and Details

THE prevention of seepage or leaks at masonry walls of the modern building is a serious problem confronting every architect, engineer and builder.

These troubles are frequently traced to faulty flashing construction. Low spots where snow, ice, and rain water concentrate, are usually found along parapet walls, curbs, or other places where flashings are installed. Inadequate or faulty construction at these vital points opens the way to troublesome leaks and costly repairs.

The Barrett system of flashing is considered a component part of the roof construction. The waterproof membrane is definitely tied in with the parapet wall by means of the flashing block. This part of the roof is reinforced, the added protection actually making it the strongest part of the roof. The flashing is flexible, and

permits of movement occasioned by settlement of the deck, or by expansion and contraction in materials.

The Barrett system, used in conjunction with Barrett Specification roofing, definitely eliminates troublesome flashing leaks at parapets, curbs, chimneys, fire-walls, etc. The responsibility for the complete roof, including flashing construction, rests with the Barrett approved roofer. The flashing is installed by the roofing contractor at the same time he applies the roofing, and its performance is fully covered in the guaranty bond.

Good flashings promote the serviceability of good roofs. The Barrett flashing system, developed after years of practical experience, is a worthy companion to Barrett Specification Roofs. Time-tried under every conceivable condition, it is accepted generally as a standard type of construction for both flat and steep built-up roofs.

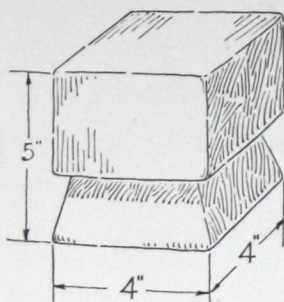


Typical Barrett Flashing Installation—Flashing Block Method

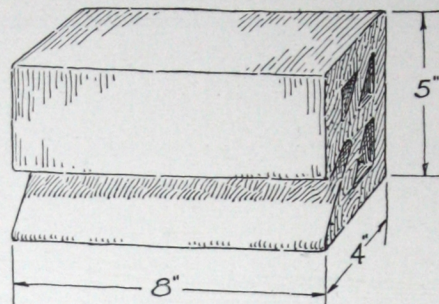


BARRETT ROOF FLASHING SYSTEM

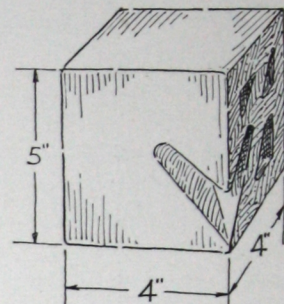
METHOD OF INSTALLING BARRETT FLASHING BLOCK



OUTSIDE CORNER

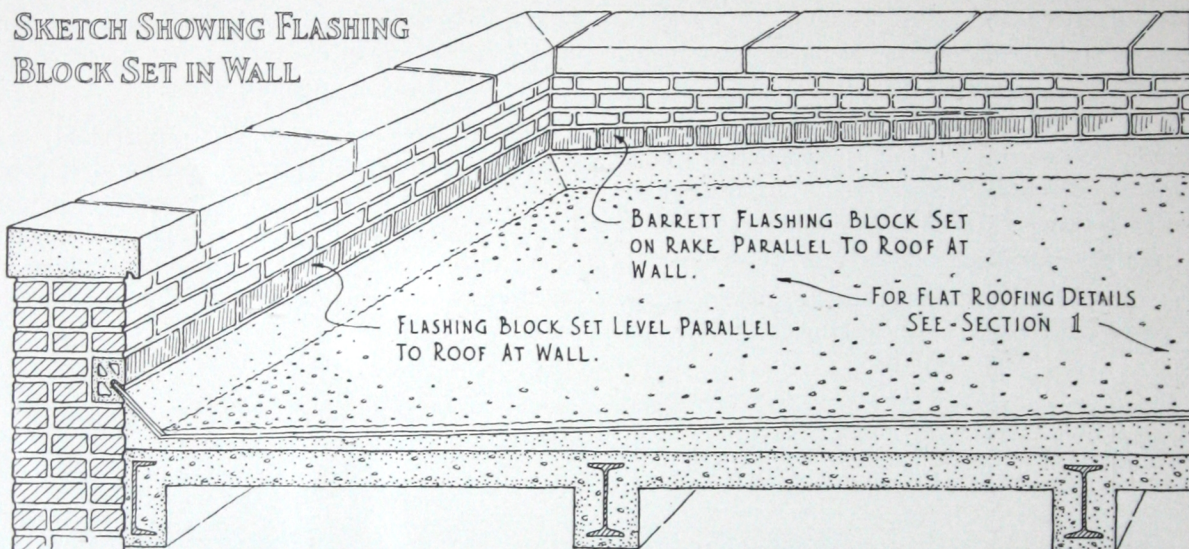


STRAIGHT FLASHING BLOCK



INSIDE CORNER

SKETCH SHOWING FLASHING
BLOCK SET IN WALL



FOR MASONRY SPECIFICATION

Barrett Flashing Block shall be built into walls with the base of the block set five (5) inches above and parallel with the finished grade line of the roof at wall.

Blocks shall be laid in true alignment, set in Portland Cement Mortar, and joints shall be properly pointed. All end joints shall be solid mortar joints.

The flashing groove of the blocks shall be thoroughly cleaned of all surplus mortar.

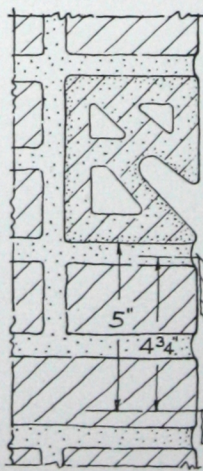
NOTE—Special blocks are manufactured for use at right angle external and internal wall corners.

For Concrete or Gypsum Roof Deck—At angle of roof deck and the walls in which flashing block has been installed, provide a concrete cant that will permit of nailing, the upper edge of which shall terminate one-quarter ($\frac{1}{4}$) inch below the flashing groove. The face of the cant shall have an incline of forty-five (45) degrees the same as the flashing groove in the block. The distance from the innermost end of flashing groove to bottom of cant strip shall not exceed ten (10) inches.

FOR CARPENTRY SPECIFICATION, BOARD ROOF DECK

At angle of roof deck and the walls in which flashing block has been installed, provide a wood cant at least one (1) inch thick, the upper edge of which shall ter-

minate one-quarter ($\frac{1}{4}$) inch below the flashing groove. The face of the cant shall have an incline of forty-five (45) degrees, the same as the flashing groove in the block. The cant shall be securely fastened to the roof deck. The distance from the innermost end of flashing groove to bottom of cant strip shall not exceed ten inches.



BASE OF FLASHING BLOCK SHALL BE SET 5" ABOVE AND PARALLEL WITH FINISHED GRADE LINE OF ROOF AT WALL.

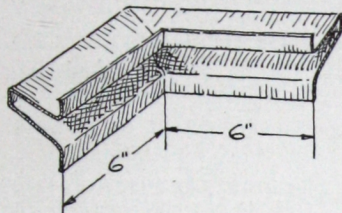
CANT SET AT 45° ANGLE, PARALLEL WITH FLASHING GROOVE.

WHERE CONCRETE OR GYPSUM ROOF DECK IS USED CANT SHALL BE CONSTRUCTED OF SIMILAR MATERIALS.

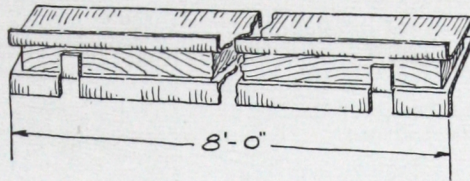


BARRETT ROOF FLASHING SYSTEM

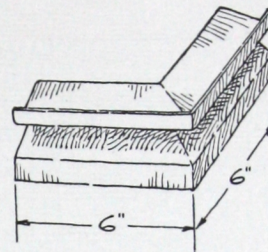
METHOD OF INSTALLING BARRETT FLASHING FORM



INSIDE CORNER

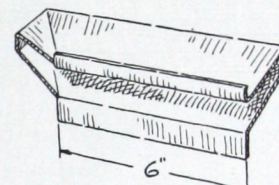
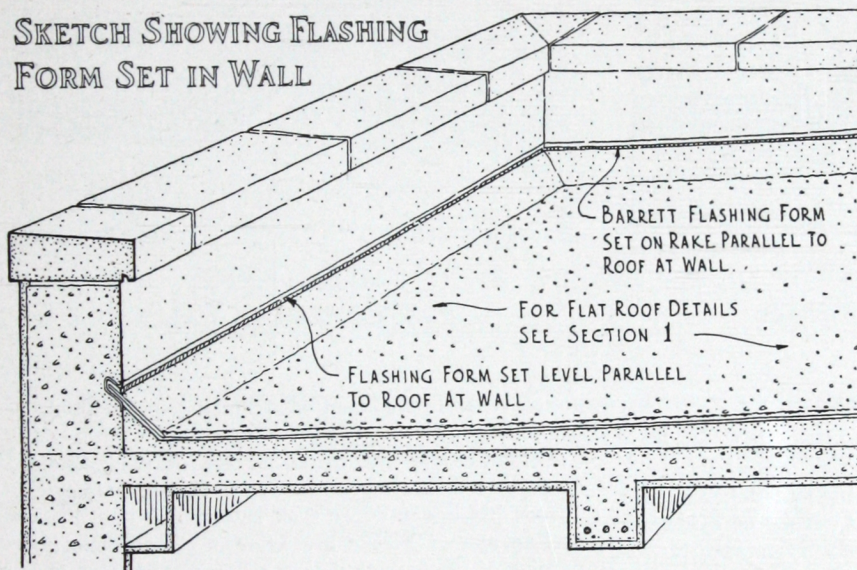


STRAIGHT FLASHING FORM

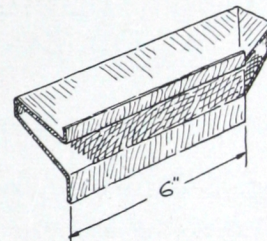


OUTSIDE CORNER

SKETCH SHOWING FLASHING
FORM SET IN WALL



INSIDE RETURN
LEFT HAND



INSIDE RETURN
RIGHT HAND

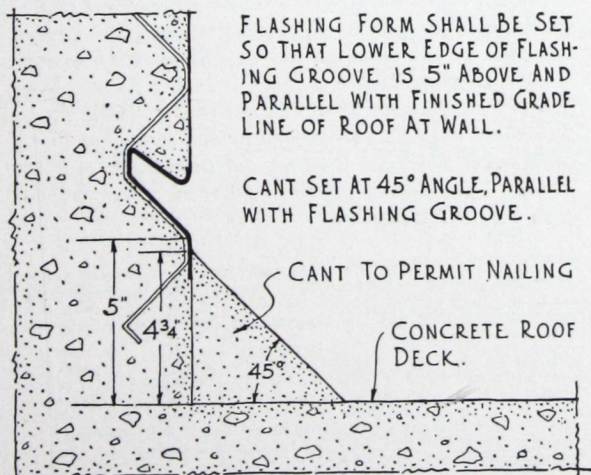
FOR CONCRETE SPECIFICATION

Barrett Flashing Form shall be attached to the inside of the wall form by means of metal strap brackets (so provided) spaced not more than two (2) feet apart and secured by one (1) inch smooth wire nails.

Barrett Flashing Form shall be set so that the lower edge of the flashing groove is five (5) inches above and parallel with the finished grade line of the roof at wall.

Note—Special mitred flashing forms are manufactured for use at right angle external and internal wall corners.

At angle of roof deck and the wall in which flashing form has been installed, provide a concrete cant that will permit of nailing, the upper edge of which shall terminate one-quarter ($\frac{1}{4}$) inch below the flashing groove. The face of the cant shall have an incline of forty-five (45) degrees the same as the flashing groove in the block. The distance from the innermost end of flashing groove to bottom of cant strip shall not exceed ten (10) inches.



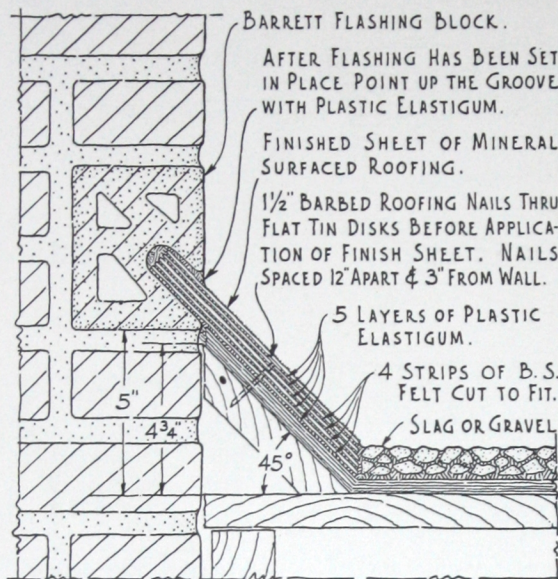
Barrett



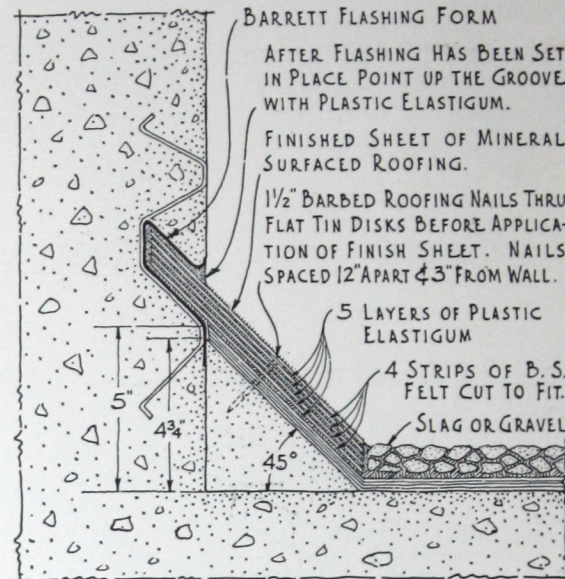
BARRETT ROOF FLASHING SYSTEM

TYPE "A-A"

20 YEAR GUARANTY BOND



BLOCK TYPE
FOR BRICK WALLS



FORM TYPE
FOR CONCRETE WALLS

SPECIFICATION

Note—This flashing shall be installed before gravel, slag, tile or other surfacing material is applied to the roof surface.

First—Before applying flashing material, the flashing groove shall be thoroughly cleaned of mortar or other foreign materials.

Second—The Felt and Pitch roofing shall be extended up the face of the cant to the wall line and cut off evenly at that point. The plies of Felt shall be solidly cemented together with Pitch and be free from wrinkles or buckles.

Third—Over the roofing, covering the cant, and up into the full depth of the flashing groove, apply a heavy uniform layer of Barrett Plastic Elastigum, into which embed one (1) ply of flashing strip cut the proper width from a roll of Barrett Specification Felt. The sheets of the flashing strips shall be lapped one (1) inch and the strips shall extend into the full depth of the flashing groove. This operation shall be repeated until four (4) layers of Plastic Elastigum and four (4) plies of flashing strip have been applied. The fourth flashing strip shall be nailed every twelve (12) inches, three (3) inches from the wall with one and one-half (1 1/2) inch barbed roofing nails through flat tin disks. Each flashing strip shall be set in sep-

arately (not folded) and shall break joints with the underlying ply.

Fourth—Over the entire surface of the flashing strips thus laid, apply a uniform trowelled coating of Plastic Elastigum. Care shall be taken so that a liberal amount of Plastic Elastigum is placed along the opening of the flashing groove. Into the Plastic Elastigum embed immediately a layer of Barrett Everlastic Mineral Surfaced Roofing of the proper width, extending into the full depth of the groove and down to the roofing. The strips of Mineral Surfaced Roofing shall be cut from across the roll so that the end of each strip shall have a two (2) inch selvage. The two (2) inch selvage shall be coated with Plastic Elastigum and shall be over-lapped by the following sheet of Mineral Surfaced Roofing and thoroughly pressed down. The flashing groove shall then be pointed up with Plastic Elastigum.

Note No. 1—IMPORTANT: No projections such as vent pipes, conductor lines or braces shall be constructed through the flashing cant. All such projections shall be placed through roof deck at a point not less than ten (10) inches from the intersection of cant with roof deck.

Note No. 2—THE BARRETT COMPANY will give its twenty (20) year guaranty bond on jobs in the United States and Canada where its inspection service is available, provided the flashing is installed in strict accordance with the above specification and subject to Barrett inspection and approval under the following condition: That the flashing shall be installed during the application of a Barrett Bonded Roof.

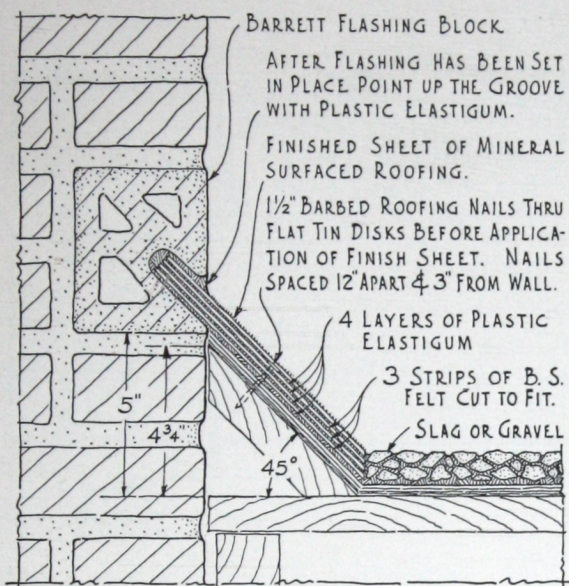




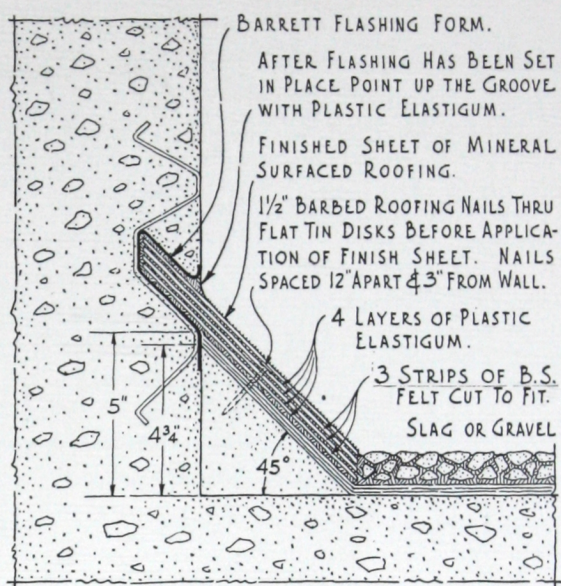
BARRETT ROOF FLASHING SYSTEM

TYPE "A"

15 YEAR GUARANTY BOND



BLOCK TYPE
FOR BRICK WALLS



FORM TYPE
FOR CONCRETE WALLS

SPECIFICATION

Note—This flashing shall be installed before gravel, slag, tile or other surfacing material is applied to the roof surface.

First—Before applying flashing material, the flashing groove shall be thoroughly cleaned of mortar or other foreign materials.

Second—The Felt and Pitch roofing shall be extended up the face of the cant to the wall line and cut off evenly at that point. The plies of Felt shall be solidly cemented together with Pitch and be free from wrinkles or buckles.

Third—Over the roofing, covering the cant, and up into the full depth of the flashing groove, apply a heavy uniform layer of Barrett Plastic Elastigum, into which embed one (1) ply of flashing strip cut the proper width from a roll of Barrett Specification Felt. The sheets of the flashing strips shall be lapped one (1) inch and the strips shall extend into the full depth of the flashing groove. This operation shall be repeated until three (3) layers of Plastic Elastigum and three (3) plies of flashing strip have been applied. The third flashing strip shall be nailed every twelve (12) inches, three (3) inches from the wall with one and one-half (1 1/2) inch barbed roofing nails through flat tin disks. Each flashing strip shall be set in

separately (not folded) and shall break joints with the underlying ply.

Fourth—Over the entire surface of the flashing strips thus laid, apply a uniform trowelled coating of Plastic Elastigum. Care shall be taken so that a liberal amount of Plastic Elastigum is placed along the opening of the flashing groove. Into the Plastic Elastigum embed immediately a layer of Barrett Everlastic Mineral Surfaced Roofing of the proper width, extending into the full depth of the groove and down to the roofing. The strips of Mineral Surfaced Roofing shall be cut from across the roll so that the end of each strip shall have a two (2) inch selvage. The two (2) inch selvage shall be coated with Plastic Elastigum and shall be over-lapped by the following sheet of Mineral Surfaced Roofing and thoroughly pressed down. The flashing groove shall then be pointed up with Plastic Elastigum.

Note No. 1—IMPORTANT: No projections such as vent pipes, conductor lines or braces shall be constructed through the flashing cant. All such projections shall be placed through roof deck at a point not less than ten (10) inches from the intersection of cant with roof deck.

Note No. 2—THE BARRETT COMPANY will give its fifteen (15) year guaranty bond on jobs in the United States and Canada where its inspection service is available, provided the flashing is installed in strict accordance with the above specification and subject to Barrett inspection and approval under the following condition: That the flashing shall be installed during the application of a Barrett Bonded Roof.

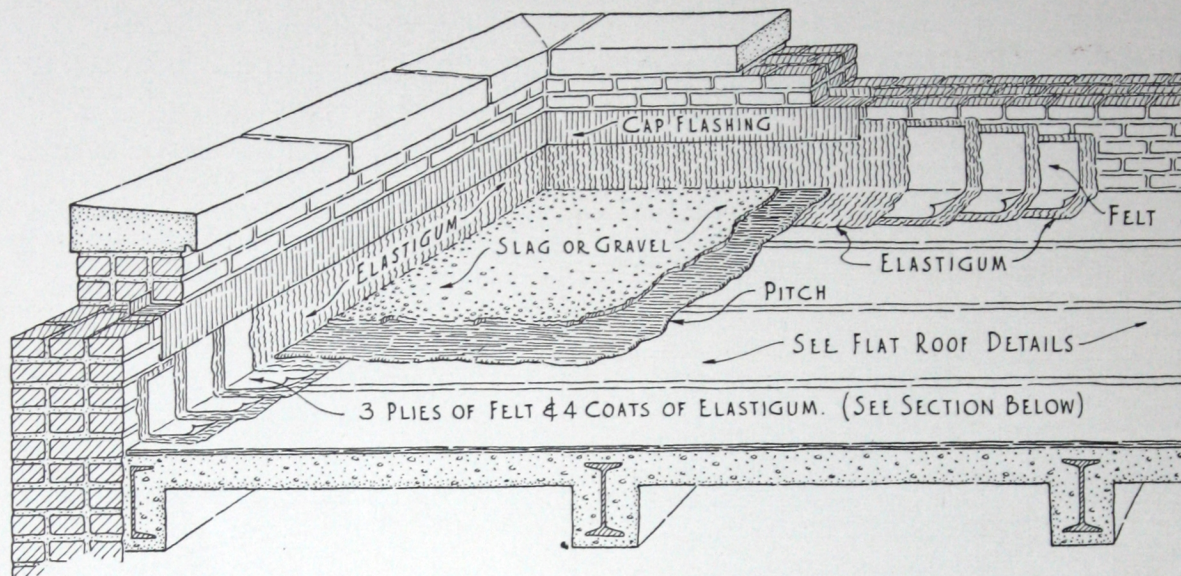




BARRETT ROOF FLASHING SYSTEM

PLASTIC ELASTIGUM TYPE 10 YEAR GUARANTY

FOR BRICK OR CONCRETE WALLS



SPECIFICATION

Note—If the roofing is laid over a board deck, the first two (2) plies of Felt shall be turned up against perpendicular surfaces at least four (4) inches. If the roofing is laid over a concrete deck, all plies shall be cut off evenly at the angle of the roof deck and parapet walls.

First—After all plies of roofing have been laid and preceding the application of the slag or gravel surface, apply a uniform trowelled coating of Barrett Plastic Elastigum for a distance of ten (10) inches up the parapet wall and six (6) inches out on the roofing into which shall be immediately embedded a ten (10) inch strip of Barrett No. 15 Asphalt Felt extending up the wall six (6) inches and out on the roofing four (4) inches.

Second—This strip shall be coated with Barrett Plastic Elastigum. Then follow with a second strip of Barrett No. 15 Asphalt Felt thirteen (13) inches wide extending eight (8) inches up the wall and five (5) inches out on the roof.

Third—This strip shall be coated with Barrett Plastic Elastigum into which embed a third strip of Barrett No. 15 Asphalt Felt sixteen (16) inches wide, extending ten (10) inches up the wall and six (6) inches out on the roof.

Fourth—This strip shall be coated uniformly with Barrett Plastic Elastigum. Care shall be taken so that the top edge of the felt strips shall be pressed firmly against the masonry wall and the Plastic Elastigum feathered against it.

Felt strips shall not exceed ten (10) feet in length and shall be lapped at least one (1) inch and all joints broken so that each is covered by at least two (2) thicknesses of felt.

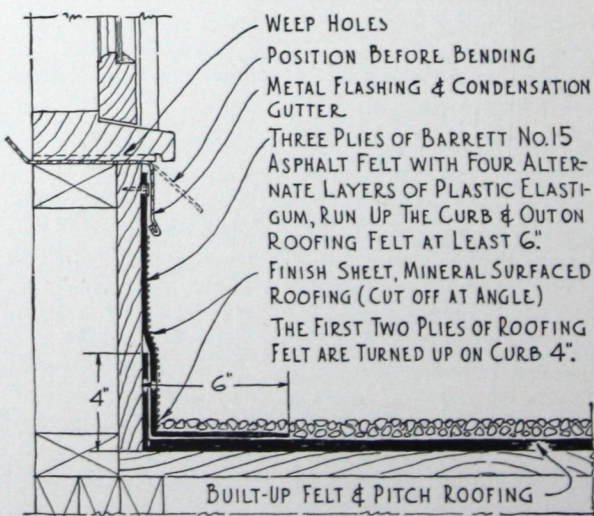
Where a cant is used, the width of the first sheet of felt installed shall be such that at least four (4) inches shall extend above top of the cant and four (4) inches

out on the roof. Each succeeding strip shall follow the proportions, as specified above.

Note No. 1—THE BARRETT COMPANY will give its ten-year guaranty on jobs in the United States and Canada where its inspection service is available, provided the flashing is installed in strict accordance with the above specification and subject to Barrett inspection and approval under the following condition: That the flashing shall be installed during the application of a Barrett Bonded Roof.

Architect's Note—The use of a metal counter flashing with this type of installation is optional with Architect, and if desired should be covered in specifications.

Where metal counter flashing is provided with this type of installation, and where specified, cap sheet of Barrett Everlastic mineral surfaced roofing may be applied after plastic elastigum flashing has been installed in place. Cap sheet shall be cut off at roof line. End laps shall be at least two (2) inches, with under lap well fastened and coated with plastic elastigum.

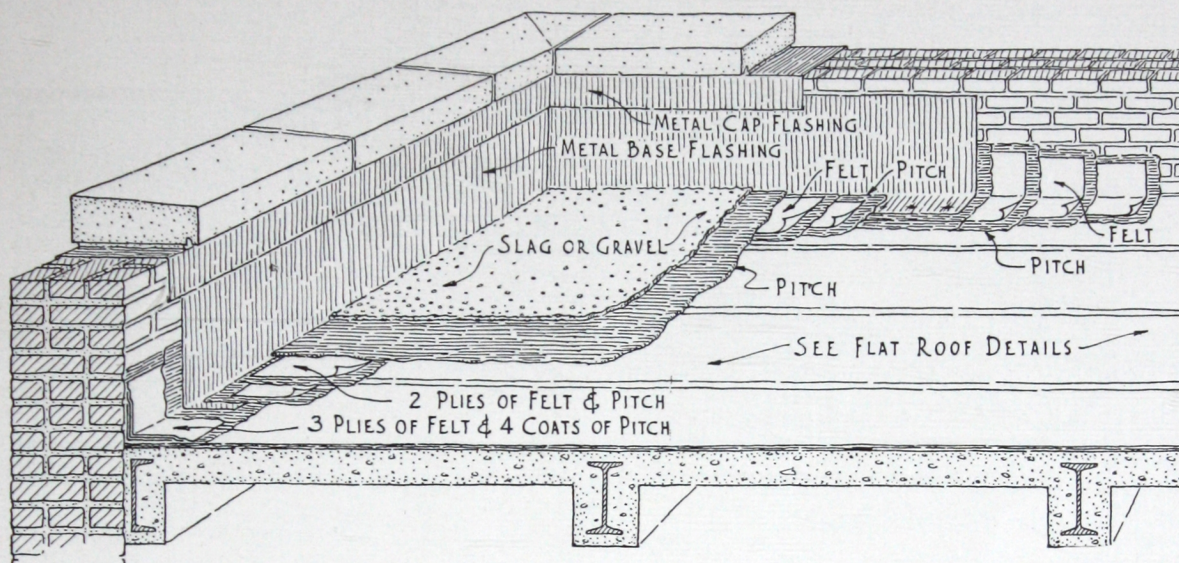


DETAIL FOR CURB FLASHING

Barrett

BARRETT ROOF FLASHING SYSTEM

METHOD OF INSTALLING METAL CAP & BASE FLASHING



SPECIFICATION

Note—Architect or engineer shall specify and describe kind of metal to be used for flashing.

Metal flashings shall be installed at all parapet walls, curbs, pent houses and other vertical surfaces as shown on plans.

Cap Flashings—(1) All cap flashings shall be set into brick walls for a distance of four (4) inches and turned up one (1) inch behind the first course of brick and down the face of the wall overlapping the base flashing at least two (2) inches. End laps shall be at least two (2) inches and soldered.

Architect's Note—Alternate Specification:

(2) All cap flashings shall be set into brick walls and shall extend from inside face of wall to within one (1) inch of outside face, and down inside face of wall overlapping the base flashing at least two (2) inches. End laps shall be at least two (2) inches and soldered.

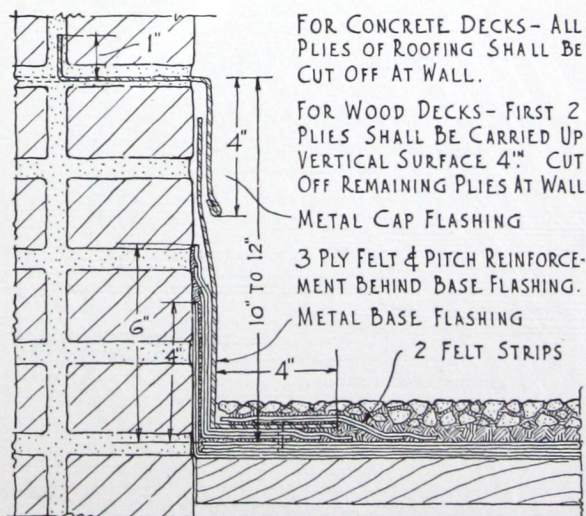
Felt and Pitch Reinforcement—After all plies of roofing have been laid, the roofing contractor shall set in separately, at the angle of the roof deck and vertical surface, three (3) plies of tarred felt cemented together with coal tar pitch. These plies shall extend out on the roofing at least four (4) inches and up the vertical surface six (6) inches. The last ply shall be coated with coal tar pitch. For roofing guaranteed for fifteen (15) years or less, a felt and pitch reinforcement of two (2) plies is sufficient.

Base Flashings—Over the felt and pitch reinforcement thus applied, the metal base flashing shall be set, extending out on the roof four (4) inches and up the vertical surface, not less than ten (10) inches, nor more than twelve (12) inches. The base flashing shall be nailed to the roof deck with barbed roofing nails spaced not more than three (3) inches on centers on a line not exceeding three-quarters ($\frac{3}{4}$) of an inch from the outer edge of the metal. If concrete roof deck does not per-

mit of nailing, a creosoted wood nailing strip at least one (1) inch thick, with two (2) inch face and three (3) inch base, shall be installed, centered on a line three (3) inches from the vertical surface.

End laps shall be locked and soldered unless otherwise specified.

The four (4) inches of metal on the roof shall be given a priming coat of Barrett Everjet paint. It shall then be coated with Coal Tar Pitch into which shall be immediately embedded a strip of tarred felt four (4) inches wide centered over the nailing course. The first strip shall be coated with Coal Tar Pitch into which shall be immediately embedded a second strip of tarred felt six (6) inches wide completely covering the first.

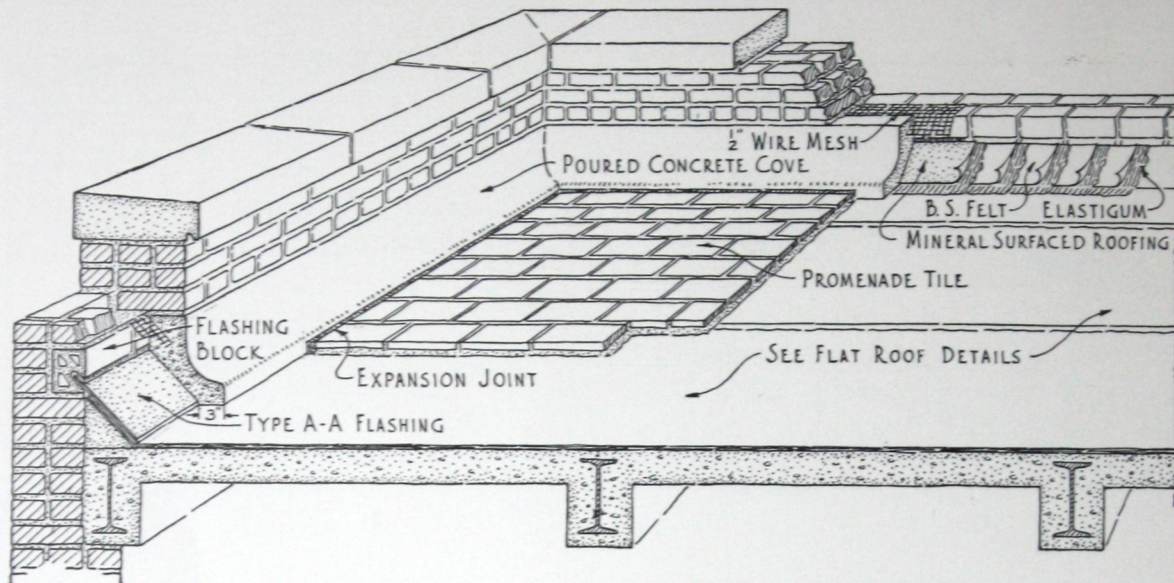


Barrett

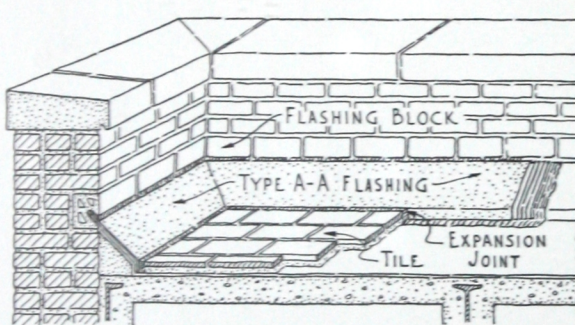


BARRETT ROOF FLASHING SYSTEM

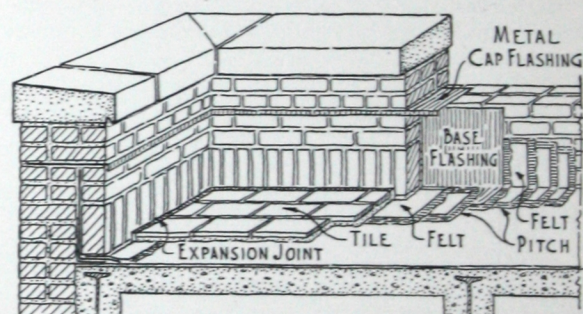
METHOD OF INSTALLING FLASHING FOR PROMENADE TILE ROOFS



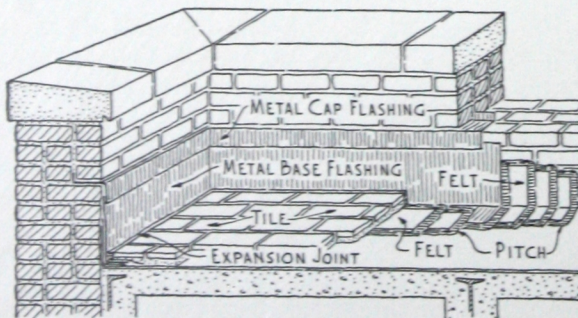
CONCEALED TYPE "A-A" FLASHING



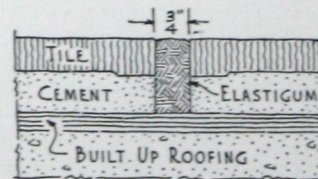
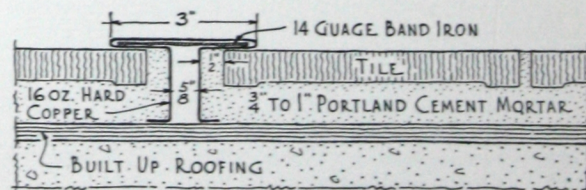
TYPE "A-A" FLASHING



CONCEALED METAL FLASHING



METAL FLASHING



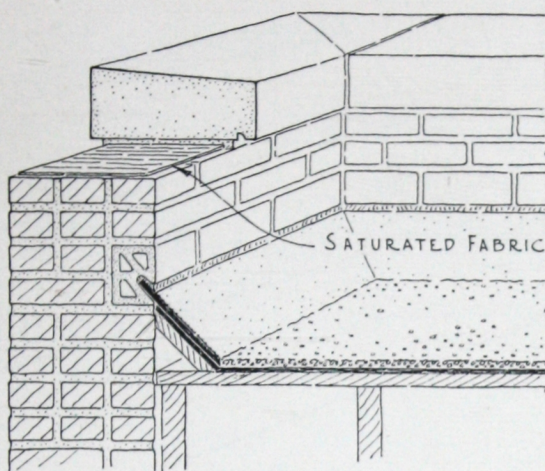
NOTE —
EXPANSION JOINTS SPACED
25'-0" IN EACH DIRECTION
EXTENDING FROM TOP OF
TILE TO THE FELT & PITCH
WATERPROOFING.

TYPES OF EXPANSION JOINTS

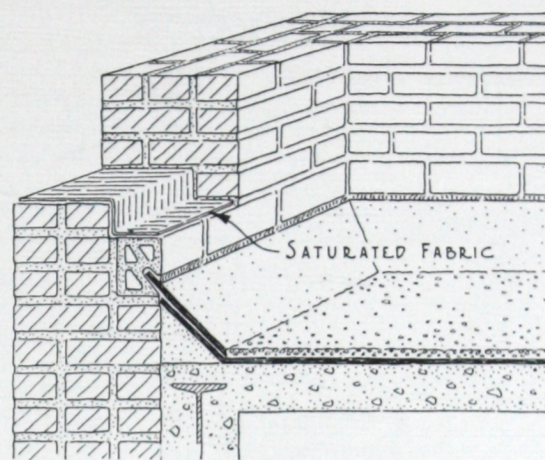
Barrett



BARRETT ROOF FLASHING SYSTEM FOR PARAPET WALLS & SPANDREL BEAMS



THRU WALL FLASHING
LOW PARAPET



THRU WALL FLASHING
HIGH PARAPET

SPECIFICATION

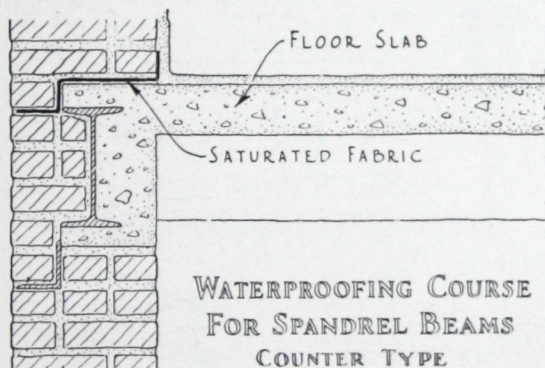
On all parapet walls, as detailed, provide and install waterproofing course consisting of 2 plies of Barrett Waterproofing Fabric and 3 full trowel coatings of Barrett Plastic XC, applied alternately. Waterproofing course shall be continuous and shall extend to within one-half inch of outside edges of walls. All end laps shall be not less than three inches, and each succeeding layer shall break joints with underlying layer.

The fabric shall be applied without wrinkles or

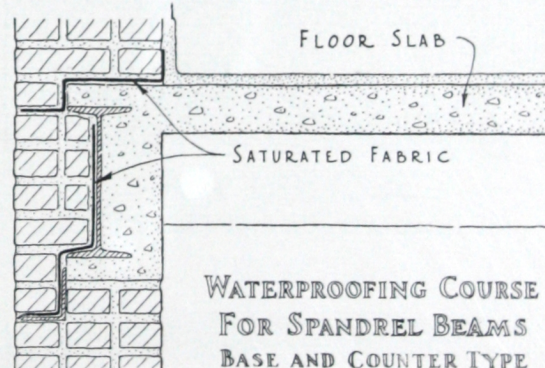
buckles and all trowel coatings shall be smooth and full. Care shall be taken not to injure the waterproofing course either during application or after completion.

Notes—1. All surfaces on which the waterproofing course is to be installed shall be smooth, dry and free from loose materials.

2. On low parapets waterproofing course may be installed under copings. On high parapets or party walls waterproofing course shall be installed flush with top of counter flashing or raggle block.



WATERPROOFING COURSE
FOR SPANDREL BEAMS
COUNTER TYPE



WATERPROOFING COURSE
FOR SPANDREL BEAMS
BASE AND COUNTER TYPE

SPECIFICATION

At all spandrels, as detailed, provide and install waterproofing course consisting of 2 plies of Barrett Waterproofing Fabric, and three full trowel coatings of Barrett Plastic XC, applied alternately. Waterproofing course shall be continuous, shall extend to within one-half inch of outside edge of wall, and shall be turned up and cemented to inside walls to a height of at least three inches. All ends laps shall be not less than three inches, and each succeeding layer shall break joints with underlying layer.

The fabric shall be applied without wrinkles or buckles and all trowel coatings shall be smooth and full. Care shall be taken not to injure the waterproofing course either during application or after completion.

Notes—1. All surfaces on which the waterproofing course is to be installed shall be smooth, dry and free from loose materials.

2. Method to be followed (whether counter or base and counter) shall be clearly indicated on plans and in specifications prepared by architect.

Barrett



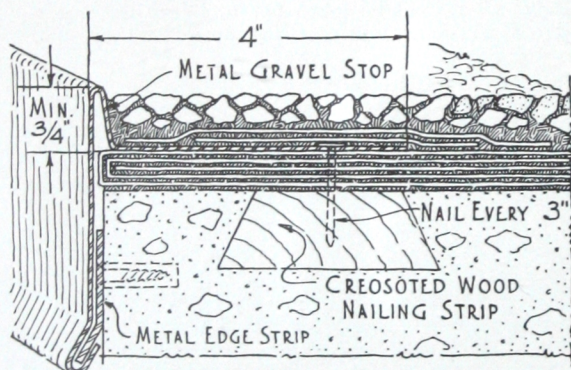
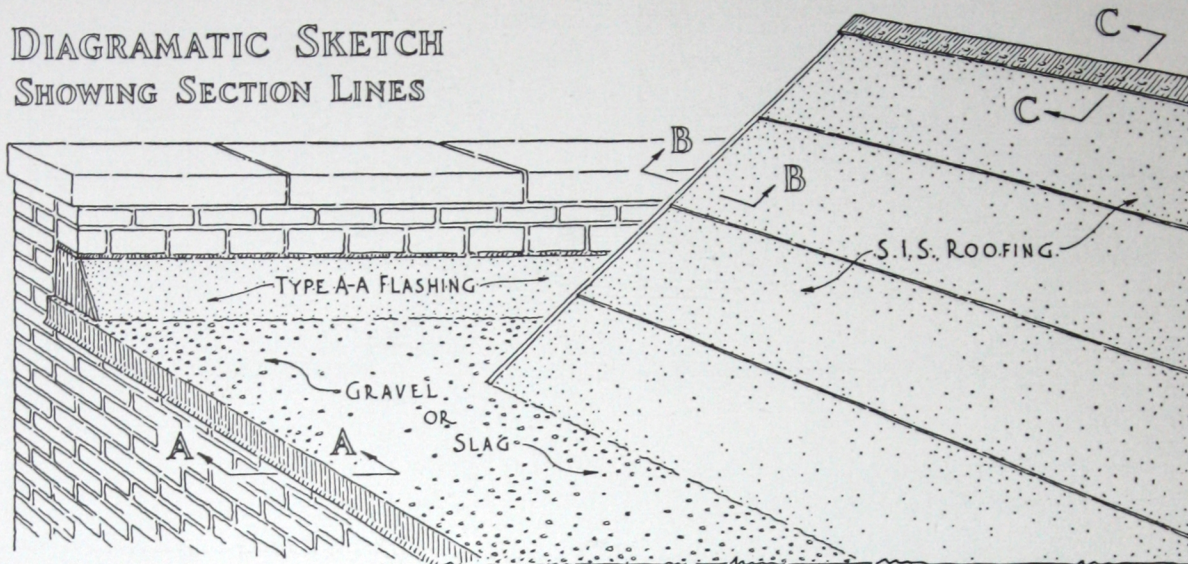
BARRETT ROOF FLASHING SYSTEM

FLAT & STEEP ROOF CONSTRUCTION

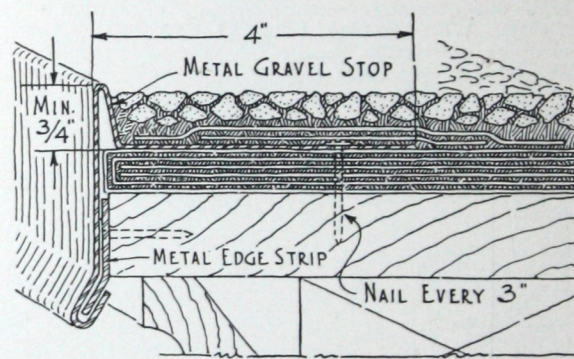
METHOD OF FINISHING EAVES & EDGES



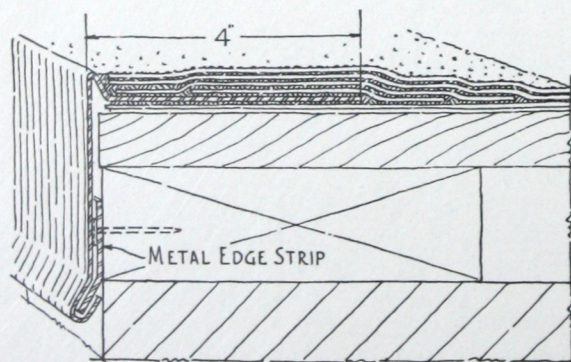
DIAGRAMATIC SKETCH
SHOWING SECTION LINES



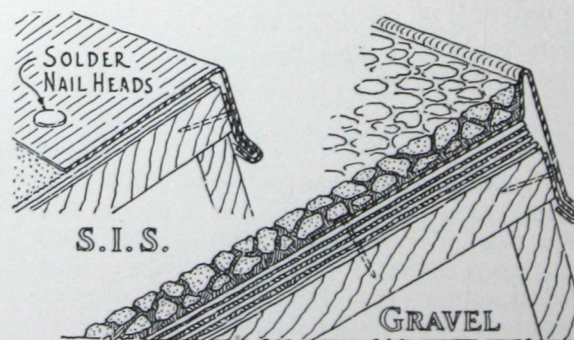
SECTION A-A
METAL EAVE FOR CONCRETE DECK



SECTION A-A
METAL EAVE FOR WOOD DECK



SECTION B-B
GABLE EDGE FOR STEEP ROOFS



SECTION C-C
METAL RIDGE FOR SAWTOOTH SKYLIGHT

Barrett

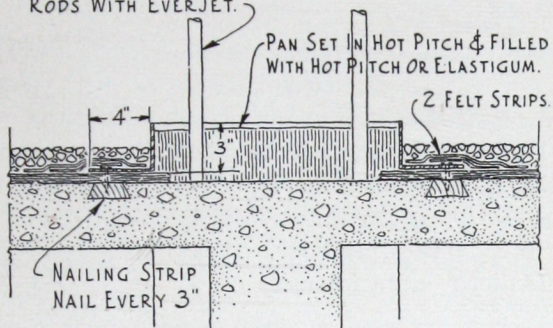


BARRETT ROOF FLASHING SYSTEM

DETAILS FOR SIGN SUPPORTS, STACKS, STUB COLUMNS, ETC.

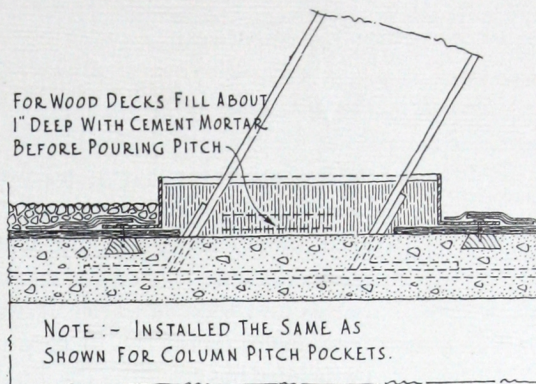


PAINT EXPOSED PORTION OF
RODS WITH EVERJET.

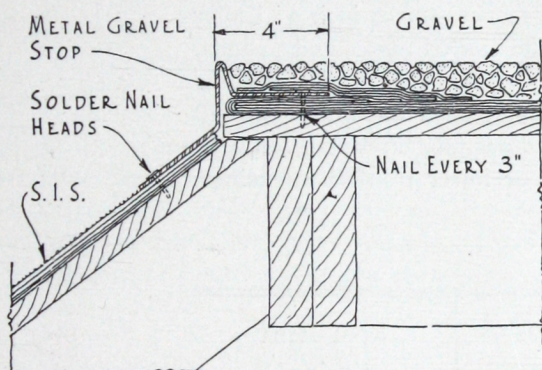


PITCH POCKETS
FOR COLUMNS

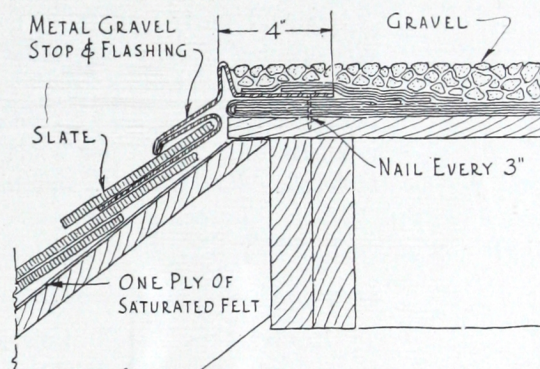
FOR WOOD DECKS FILL ABOUT
1" DEEP WITH CEMENT MORTAR
BEFORE POURING PITCH.



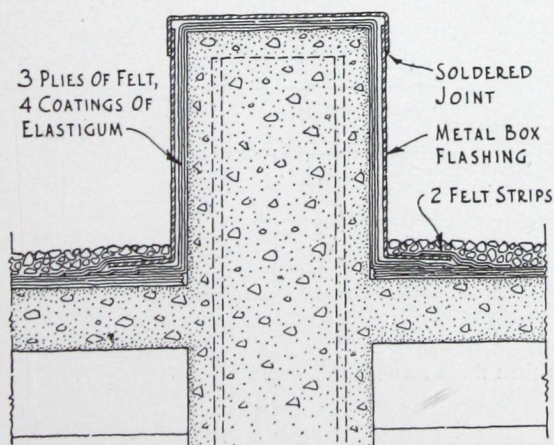
PITCH POCKETS
FOR SIGN SUPPORTS



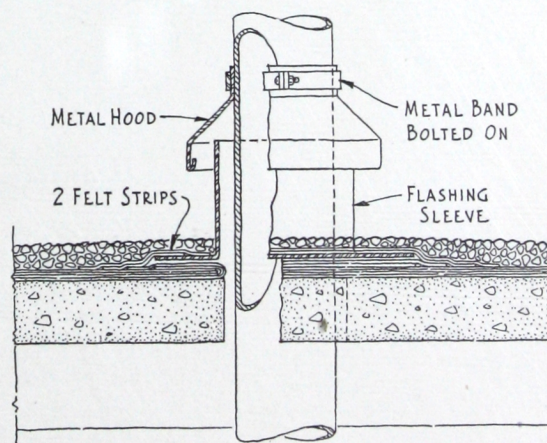
DETAIL FOR FLAT & STEEP ROOF
CONNECTION



DETAIL FOR FLAT & STEEP
SHINGLE TYPE ROOF CONNECTION



METAL CASING FOR STUB COLUMNS



FLASHING FOR STACKS

Barrett



BARRETT ROOF DRAINAGE SYSTEM

TABLE FOR DETERMINATION OF ROOF LEADERS



THE determination of leader sizes required to drain roof areas effectively depends largely on local conditions, and can be accurately calculated only when the rainfall intensity is definitely known. It is estimated that the maximum rate in the United States and Canada varies from 4.5 to 8.7 inches per hour. It is reasonable, therefore, to base computations on an intensity of 8 inches per hour.

In designing drainage systems, the location of leader lines and openings should first be determined. It is recommended that leader openings be spaced not more than 75 ft. apart.

Drainage of 150 sq. ft. of roof area per square inch of leader pipe opening is an average value for the United States and Canada. This table, therefore, is based on 150 sq. ft. of roof area, drained per square inch of leader pipe area, and on a maximum rainfall intensity of 8 inches per hour. Modifications in last column of table should be made to suit higher or lower rainfall intensities.

Leader Pipe Size (Diameter Inches)	Leader Pipe Area (In Square Inches)	Roof Area Drained (In Square Feet)
3	7.07	1060
4	12.57	1885
5	19.63	2945
6	28.27	4240
8	50.26	7540

NOTES:—All outlets should be provided with strainers.
Leader pipes should not be less than three inches in diameter.

Barrett

SECTION 4

Roof Drainage System Specifications and Details

IN ALL types of roof construction, it is consistent that roof drains be at least as permanent as the roof coverings they serve. They should be easy to install, should effectively function under all prevailing conditions, and should provide against clogging of drainage outlets by leaves or debris deposited on the roof proper.

The Barrett Holt Roof Connection* meets the demand for a completely assembled, long-lived and dependable roof drain fixture. The connection is made up in a variety of types to meet the particular conditions involved. It consists of a roof fitting with roof locking attachment; a component flashing flange; and an expansion joint. The types furnished for use in connection with inside leader lines are equipped with a cast metal tile or gravel stop; a strainer plate; and serviceable cast metal strainer.

The flashing flange furnished as a component part of the Barrett Holt Roof Connection assures a dependable connection between the leader head unit and the roof covering. The expansion joint makes possible a flexible, yet water and gas-tight joint between the connection and

the pipe or fixture joined to it. The changes resulting from shrinkage, settlement, and expansion or contraction are thereby properly provided for without danger of broken joints or troublesome leaks.

They are used: (1) As a roof leader connection where inside leader or conductor pipe is installed; (2) As a roof vent connection where soil or waste vent pipe is installed; (3) As a connection where any pipe, flag-pole, tank support or similar fixture is carried through the roof deck of a building.

Sixteen years of use under exacting conditions have proved the Barrett Holt Roof Connection to be the most dependable device of its kind on the market. It simplifies specification procedure—a type to meet each need can be specified in a few words. It is easy to install, and allowances covering extra parts or assembly costs are not necessary.

The Barrett Holt Roof Connections described are standard, and are recommended for use on all types of flat and steep roof construction, in accordance with the specifications outlined.

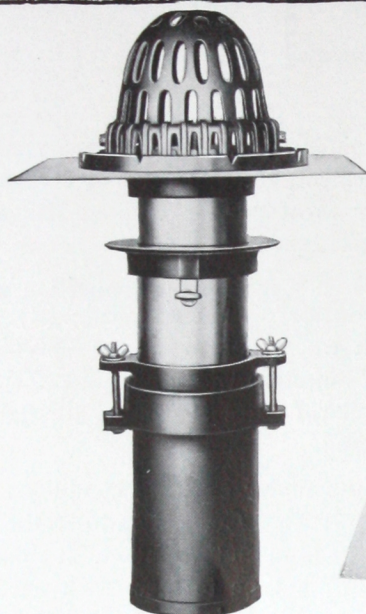
* Patented



Typical Barrett Holt Roof Leader Installation



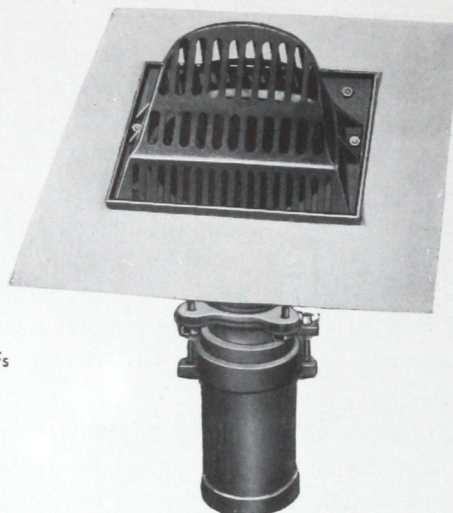
BARRETT ROOF DRAINAGE SYSTEM HOLT ROOF LEADER & VENT CONNECTIONS



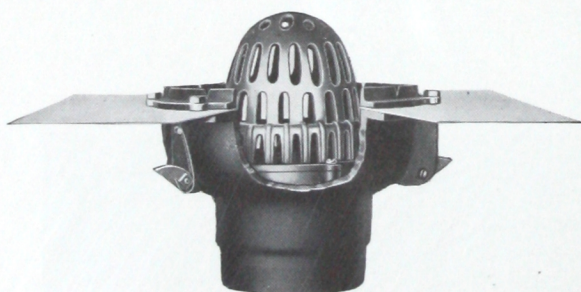
Type 1 Leader Connection
for Slag or Smooth Surfaced Roofs



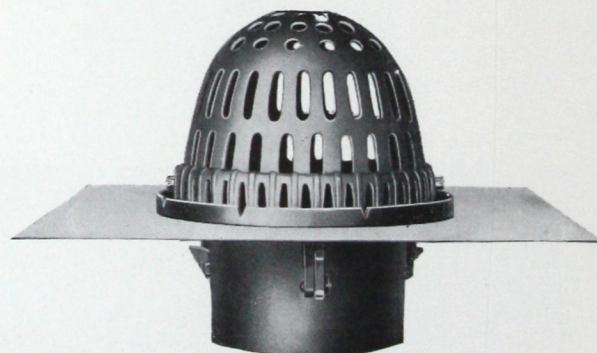
Type 1 Leader Connection
for Tile Surfaced Roofs



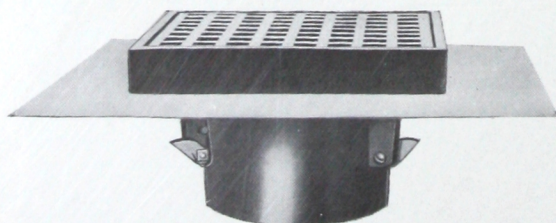
Type 2 Leader Connection
for Inclined Roofs



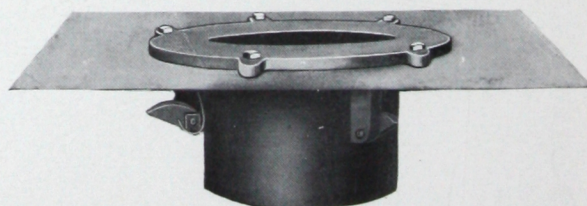
Type 5 Leader Connection
for Slag or Smooth Surfaced Roofs



Type 6 Leader Connection
for Slag or Smooth Surfaced Roofs



Type 6 Leader Connection
for Tile Surfaced Roofs



Type 6 Vent Connection
for Slag or Smooth Surfaced Roofs

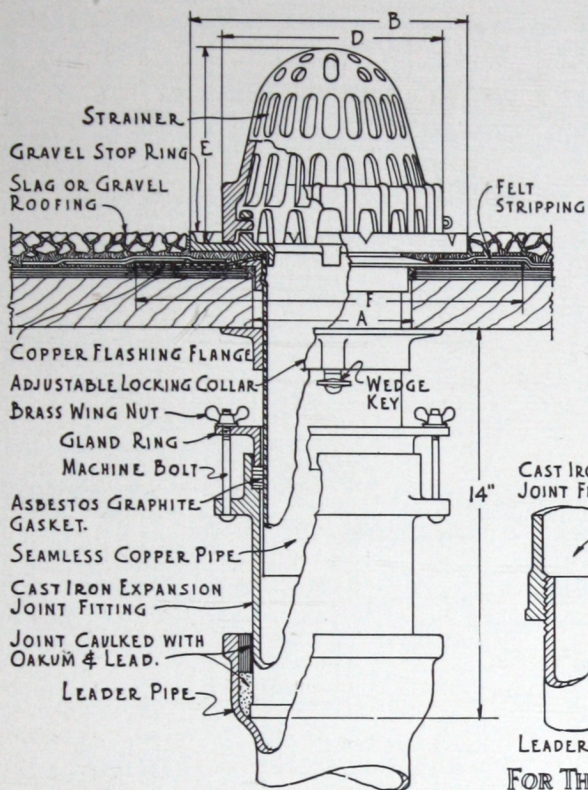
Barrett



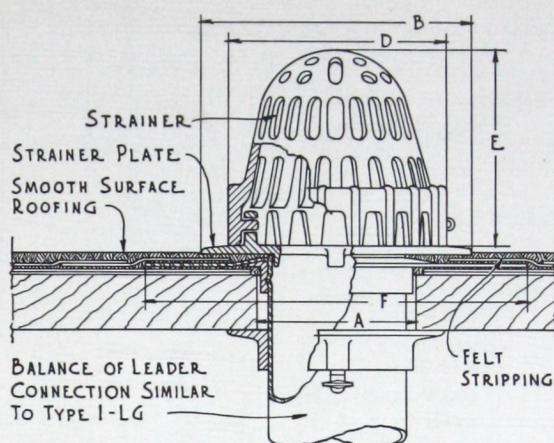
BARRETT ROOF DRAINAGE SYSTEM

METHOD OF INSTALLING HOLT LEADER CONNECTIONS

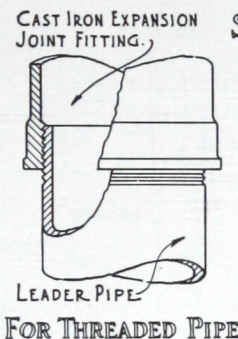
FOR TYPES 1-LG, 1-LS & 1-LM



SLAG OR GRAVEL SURFACE-TYPE 1-LG



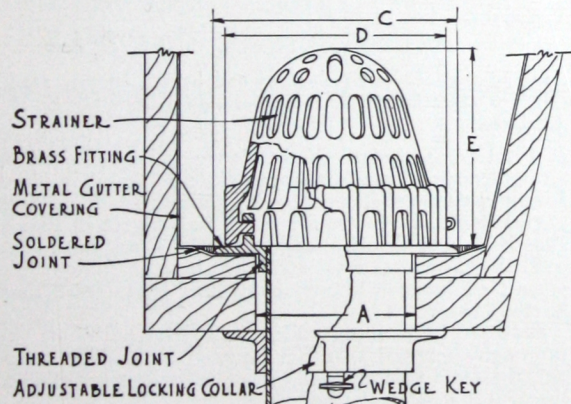
SMOOTH SURFACE-TYPE 1-LS



FOR THREADED PIPE

SIZE OF PIPE	A	B	C	D	E	F
3"	4"	8"	7"	6 3/4"	6 1/8"	12"x12"
4"	5"	8"	7"	6 3/4"	6 1/8"	12"x12"
5"	6"	10 3/4"	9 1/2"	9 1/2"	8 1/2"	14"x14"
6"	7"	10 3/4"	9 1/2"	9 1/2"	8 1/2"	16"x16"
8"	9"	11 3/4"	11"	10 1/2"	9 1/2"	18"x18"
10"	11"	14 1/4"	13 1/2"	13"	11"	20"x20"

DIMENSION TABLE



METAL COVERED GUTTERS-TYPE 1-LM

THICKNESS OF ROOF DECK	LENGTH OF CONNECTION
1" MAX.	10"
3"	12"
5"	14"
7"	16"
9"	18"

NOTE.-
WHEN SCREW THREAD PIPE IS TO BE USED IN BUILDINGS CONSTRUCTED OF STEEL, CONCRETE, BRICK, STONE OR SIMILAR NON-SHRINKABLE MATERIAL, AND THE EXPANSION AND CONTRACTION OF THE LEADER PIPE WILL NOT EXCEED 1", A CONNECTION 2" SHORTER MAY BE USED. THE MINIMUM LENGTH OF THE CONNECTION IS 10".

These types are used as leader connections on flat roofs having interior drainage, except roofs covered with tile or a similar material, and where ample working space is provided below the roof deck.

SPECIFICATION

The opening through the roof deck shall be of proper size to receive the Roof Leader Connection and shall be concentric with leader pipe.

Barrett Holt Roof Leader Connection, Type shall be installed at all drainage outlets and shall be of proper size and length to connect to inch leader pipe as shown on Drawing No.

Holt Roof Leader Connections shall be installed and connected complete in strict accordance with directions of the manufacturer.

Note—Where built-up roofing is used as a roof covering, two plies of Felt thoroughly embedded in hot bitumen shall be applied over the entire copper flashing flange, the outer edge of the first ply to extend beyond the flange not less than three (3) inches and of the second ply not less than six (6) inches before application of finished roof surfacing.

Important—The copper flashing flange being an integral part of the Type 1LG, 1LS and 1LM Connections, shall in no case be removed. If the flange is bent, it shall be straightened and made smooth before it is set in place. The flashing flange shall be secured to the roof deck with nails wherever possible.

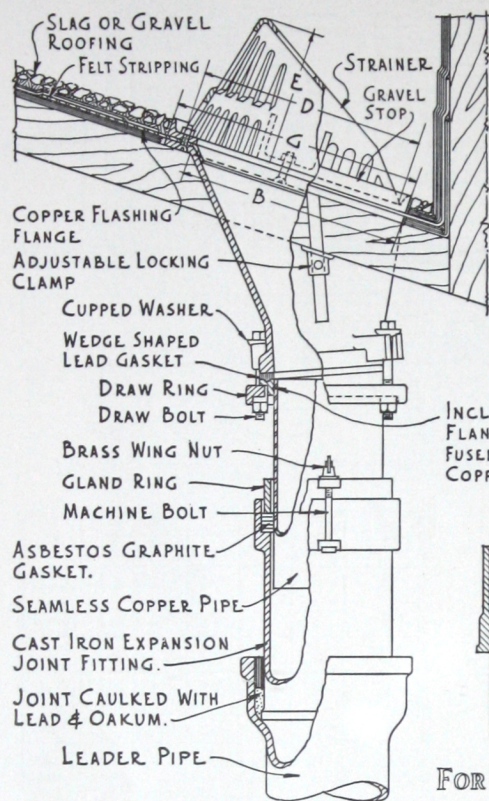




BARRETT ROOF DRAINAGE SYSTEM

METHOD OF INSTALLING HOLT LEADER CONNECTIONS

FOR TYPES 2-LG & 2-LS



SIDE VIEW

SLAG OR GRAVEL SURFACE TYPE 2-LG

This type is used as a leader connection on inclined roofs ranging from 12 to 42 degrees and having interior drainage. The range of variation of the standard connection is from 18° to 28°. For lesser inclines ranging from 12° to 18° or greater inclines ranging from 28° to 42°, special fittings are furnished.

SPECIFICATION

The opening through the roof deck shall be of proper size to receive the Roof Leader Connection, and shall be concentric with leader pipe.

First—Barrett Holt Roof Leader Connection, Type shall be installed at all drainage outlets and shall be of proper size and length to connect to inch leader pipe as shown on Drawing No.

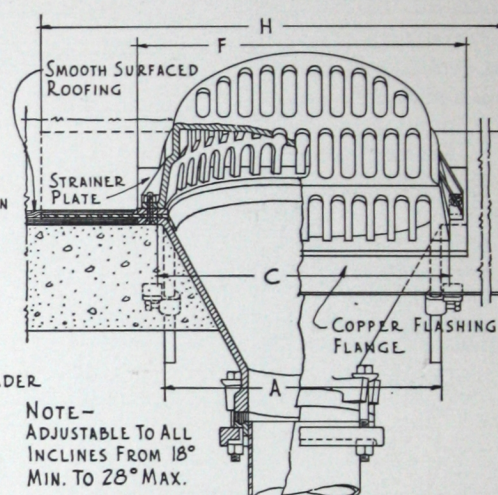
Second—Holt Roof Leader Connection shall be adjusted to fit the roof incline and draw-bolts tightened to obtain a water-tight joint. The Connection shall be set in place so that the lower surface of the iron flange shall be flush with the finished surface of the roof deck. The adjustable locking clamps shall be brought up tightly against the under-side of the roof deck and firmly fastened with the set screws so that the Connection is made integral with the roof deck.

Third—At each drainage point a section of the valley roofing not less than three (3) feet wide shall be carried up the inclined surface of the roof deck not less than two (2) feet. Roofing shall terminate at the outer edge of the iron flange of the Connection.

Fourth—After all roofing felt has been laid and before the finished wearing surface is applied, the surface of the iron flange of the Connection shall be thoroughly cleaned and the copper flashing flange embedded

SIZE OF PIPE	A	B	C	D	E	F	G	H
3"	9 $\frac{1}{8}$ "	6 $\frac{3}{8}$ "	10 $\frac{1}{8}$ "	7 $\frac{1}{8}$ "	4 $\frac{5}{8}$ "	10 $\frac{7}{8}$ "	7 $\frac{1}{2}$ "	18"x18"
4"	10 $\frac{3}{8}$ "	8 $\frac{3}{8}$ "	11 $\frac{3}{8}$ "	8 $\frac{5}{8}$ "	5 $\frac{3}{8}$ "	12 $\frac{1}{4}$ "	9 $\frac{3}{8}$ "	20"x20"
5"	11 $\frac{3}{8}$ "	9 $\frac{1}{8}$ "	12 $\frac{1}{2}$ "	9 $\frac{1}{8}$ "	5 $\frac{1}{2}$ "	13 $\frac{1}{8}$ "	10 $\frac{1}{2}$ "	22"x22"
6"	12 $\frac{3}{8}$ "	10 $\frac{3}{8}$ "	13 $\frac{3}{8}$ "	10"	5 $\frac{3}{4}$ "	14 $\frac{1}{4}$ "	11 $\frac{3}{8}$ "	24"x24"
8"	THIS CONNECTION ON SPECIAL ORDER.							

DIMENSION TABLE



NOTE—ADJUSTABLE TO ALL INCLINES FROM 18° MIN. TO 28° MAX.

FRONT VIEW

SMOOTH SURFACE TYPE 2-LS

in Plastic Elastigum. If the flange is bent it shall be straightened and made smooth before being set in place. Flashing flange shall be nailed wherever possible. Iron gravel stop ring or strainer plate shall be set in Plastic Elastigum and firmly drawn down by brass nuts.

Fifth—The cast iron strainer shall be fastened in place (if a brass or aluminum strainer is desired it shall be specified).

Sixth—The copper Flashing Flange shall be thoroughly mopped with hot bitumen into which, while hot, the steep roofing shall be applied and brought up to the gravel stop or strainer plate.

Seventh—The valley roofing shall be laid and brought up to the gravel stop or strainer plate.

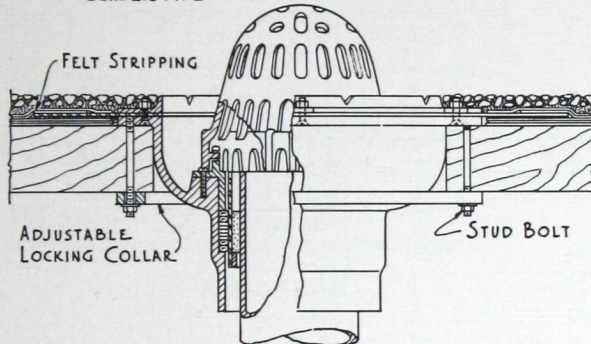
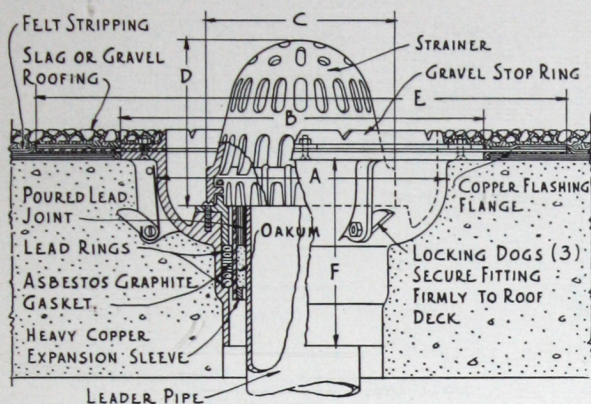
Eighth—The gland ring, gasket and expansion joint fitting shall be set in place and the last length of leader pipe cut to proper length and placed in position. The lower end of the expansion joint fitting shall be not less than fourteen (14) inches from the bottom of the veins on the side of the roof bowl.

Ninth—The gasket and gland ring shall be brought down into the expansion joint fitting, bolted and tightened sufficiently by the wing nuts to obtain a water-tight connection. The joint between the expansion joint and the leader pipe shall then be made.

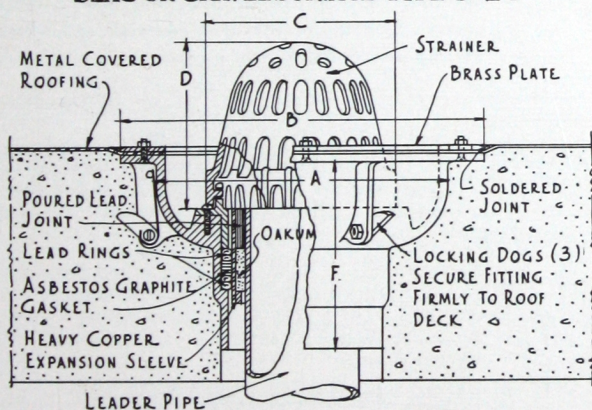
Barrett



BARRETT ROOF DRAINAGE SYSTEM METHOD OF INSTALLING HOLT LEADER CONNECTIONS FOR TYPES 5-LG, 5-LS & 5-LM



SLAG OR GRAVEL SURFACE TYPE 5-LG



METAL COVERED GUTTERS & ROOFS TYPE 5-LM

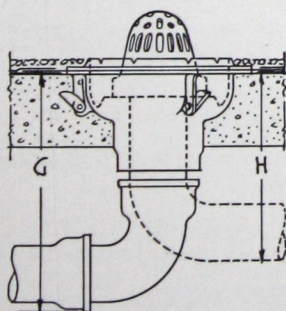
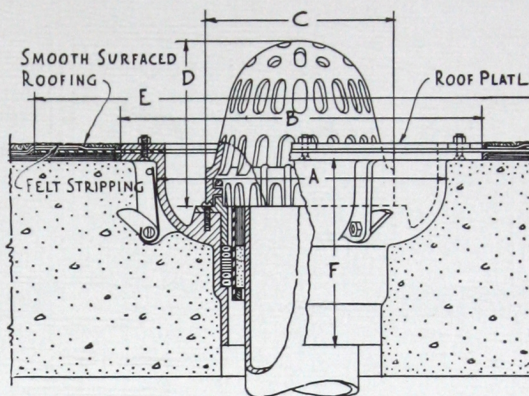


TABLE OF MIN. DIMENSIONS		
SIZE OF PIPE	G	H
3"	17 $\frac{1}{2}$ "	11 $\frac{1}{2}$ "
4"	18 $\frac{1}{4}$ "	12"
5"	18 $\frac{3}{4}$ "	12 $\frac{1}{2}$ "
6"	19 $\frac{1}{4}$ "	13"
8"	20"	13 $\frac{1}{2}$ "



SMOOTH SURFACE TYPE 5-LS

NOTE—
STUD BOLTS AND ADJUSTABLE LOCKING COLLAR
USED ONLY FOR WOOD OR GYPSUM ROOF DECKS.

SIZE OF PIPE	A	B	C	D	E	F
3"	10 $\frac{1}{4}$ "	12 $\frac{5}{8}$ "	6 $\frac{3}{4}$ "	6 $\frac{1}{8}$ "	20"x20"	7"
4"	12 $\frac{1}{4}$ "	14 $\frac{5}{8}$ "	9 $\frac{1}{2}$ "	8 $\frac{1}{2}$ "	24"x24"	7"
5"	12 $\frac{1}{4}$ "	14 $\frac{5}{8}$ "	9 $\frac{1}{2}$ "	8 $\frac{1}{2}$ "	24"x24"	7"
6"	13 $\frac{1}{4}$ "	15 $\frac{5}{8}$ "	10 $\frac{1}{2}$ "	9 $\frac{1}{2}$ "	24"x24"	7"
8"	15 $\frac{1}{4}$ "	17 $\frac{5}{8}$ "	13"	11"	26"x26"	7"

DIMENSION TABLE

These types are used as leader connections on flat roofs having interior drainage, where a sump type of roof connection is desired.

SPECIFICATION

The opening through the roof deck shall be of proper size to receive the Roof Leader Connection and shall be concentric with the leader pipe.

Barrett Holt Roof Leader Connection Type shall be installed at all drainage outlets and shall be of proper size and length to connect to inch leader pipe as shown on Drawing No.....

Holt Roof Leader Connections shall be installed and connected complete in strict accordance with directions of the manufacturer.

Note—Where built-up roofing is used as a roof covering, two plies of felt thoroughly embedded in hot bitumen shall be applied over the entire copper flashing flange, the outer edge of the first ply to extend beyond the flange not less than three (3) inches and of the second ply not less than six (6) inches.

When used in connection with gypsum or wood roof decks, types 5LG, 5LS and 5LM Connections are equipped with threaded stud bolts which hold the adjustable locking collar in place.

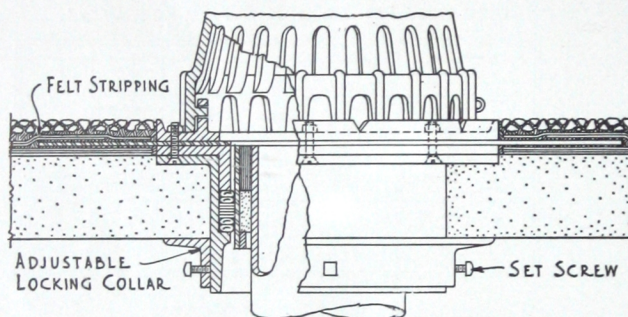
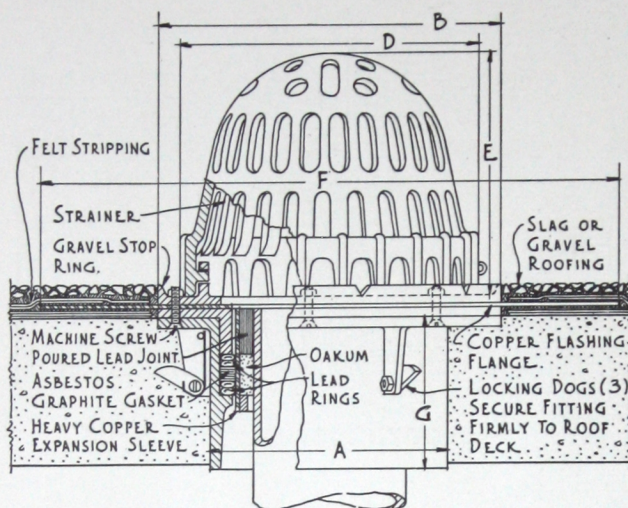
Barrett



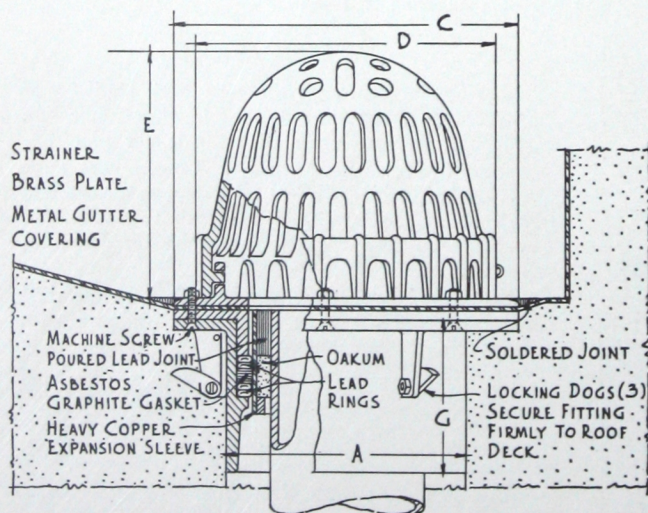
BARRETT ROOF DRAINAGE SYSTEM

METHOD OF INSTALLING HOLT LEADER CONNECTIONS

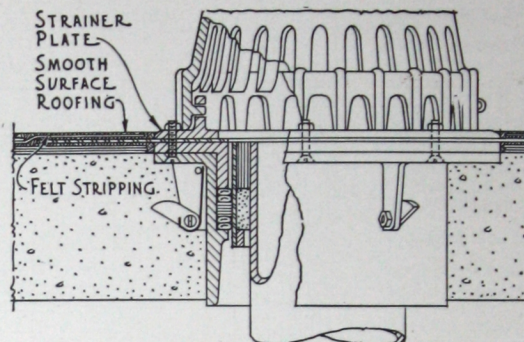
FOR TYPES 6-LG, 6-LS & 6-LM



SLAG OR GRAVEL SURFACE-TYPE 6-LG



METAL COVERED GUTTERS & ROOFS-TYPE 6-LM



SMOOTH SURFACE-TYPE 6-LS

SIZE OF PIPE	A	B & C	D	E	F	G
3"	6 1/4"	10 3/4"	9 1/2"	8 1/2"	16"x16"	4 1/2"
4"	7 1/4"	10 3/4"	9 1/2"	8 1/2"	18"x18"	4 1/2"
5"	8 1/4"	11 3/4"	10 1/2"	9 1/2"	20"x20"	4 1/2"
6"	9 1/4"	11 3/4"	10 1/2"	9 1/2"	20"x20"	4 1/2"
8"	11 1/4"	14 1/4"	13"	11"	24"x24"	4 1/2"

DIMENSION TABLE

These types are used as leader connections on flat roofs having interior drainage, except roofs covered with tile or a similar material, and where working space below the roof deck is restricted.

SPECIFICATION

The opening through the roof deck shall be of proper size to receive the Roof Leader Connection and shall be concentric with the leader pipe.

Barrett Holt Roof Leader Connection Type shall be installed at all drainage outlets and shall be of proper size and length to connect to inch leader pipe as shown on Drawing No.....

Holt Roof Leader Connections shall be installed and connected complete in strict accordance with directions of the manufacturer.

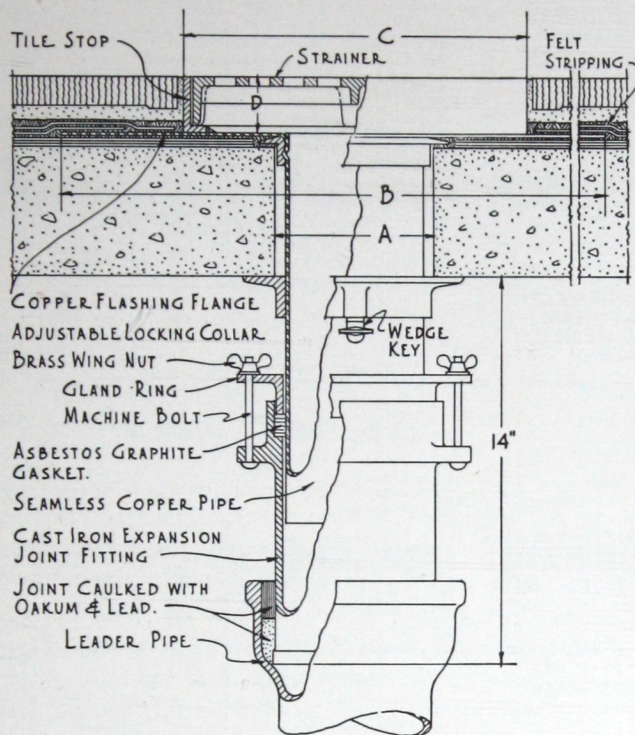
Where built-up roofing is used as a roof covering, two plies of felt thoroughly embedded in hot bitumen shall be applied over the entire copper flashing flange, the outer edge of the first ply to extend beyond the flange not less than three (3) inches and of the second ply not less than six (6) inches before application of finished surfacing.

Note—Where gypsum or wood roof deck exceeds 3 1/2 inches in thickness, types 6LG, 6LS and 6LM Connections are equipped with threaded stud bolts which hold the adjustable locking collar in place.

Barrett



BARRETT ROOF DRAINAGE SYSTEM METHOD OF INSTALLING HOLT LEADER CONNECTIONS TYPES 1-LT & 6-LT FOR TILE SURFACED ROOFS



SIZE OF PIPE	A	B	C	D
3"	4"	18"x18"	10 $\frac{3}{8}$ "	3 $\frac{1}{4}$ "
4"	5"	18"x18"	10 $\frac{3}{8}$ "	TO 3 $\frac{1}{2}$ "
5"	6"	18"x18"	10 $\frac{3}{8}$ "	UNIT OF VARIATION
6"	7"	18"x18"	10 $\frac{3}{8}$ "	4"
8"	9"	ON SPECIAL ORDER ONLY		
10"	11"			

DIMENSION TABLE

SPECIFICATION

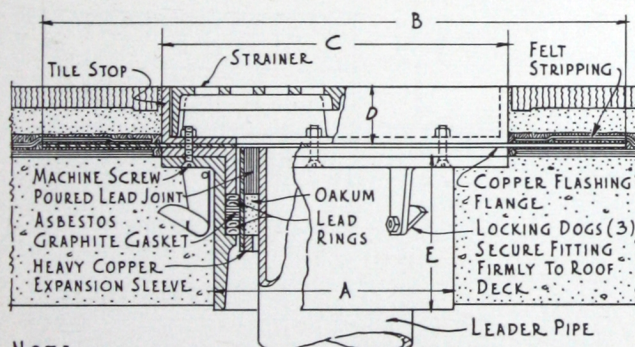
The opening through the roof deck shall be of proper size to receive the Roof Leader Connection and shall be concentric with leader pipe.

Barrett Holt Roof Leader Connection Type . . . shall be installed at all drainage outlets and shall be of proper size and length to connect to . . . inch leader pipe as shown on Drawing No. . . .

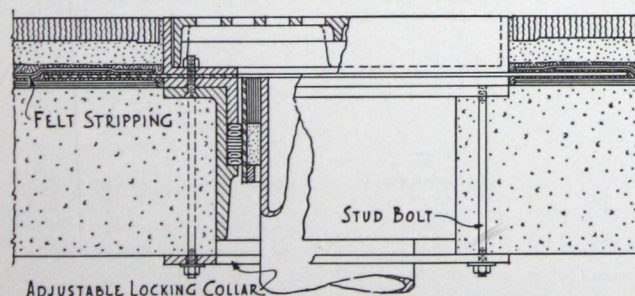
Holt Roof Leader Connections shall be installed and connected complete in strict accordance with directions of the manufacturer.

Before the application of the cement bed or the finished surfacing material, two plies of felt thoroughly embedded in hot bitumen shall be applied over the entire copper flashing flange, the outer edge of the first ply to extend beyond the flange not less than three (3) inches and of the second ply not less than six (6) inches.

TILE OR SIMILAR SURFACE-TYPE 1-LT

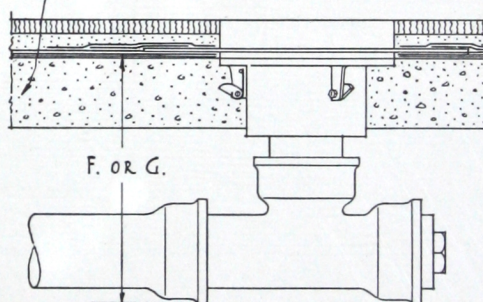


NOTE -
STUD BOLTS AND ADJUSTABLE LOCKING COLLAR
USED ONLY FOR WOOD OR GYPSUM ROOF DECKS.



TILE OR SIMILAR SURFACE-TYPE 6-LT

MATERIAL OF ROOF DECK DOES NOT CHANGE
MINIMUM DISTANCES (F. OR G.)



F - REFERS TO CAST IRON SOIL PIPE
G - REFERS TO WROUGHT IRON OR STEEL
SCREW PIPE.

SIZE OF PIPE	A	B	C	D	E	F	G
3"	6 $\frac{1}{4}$ "	20"x20"	10 $\frac{1}{2}$ "	1"	4 $\frac{1}{2}$ "	15 $\frac{1}{4}$ "	13 $\frac{1}{2}$ "
4"	7 $\frac{1}{4}$ "	20"x20"	10 $\frac{1}{2}$ "	TO 3 $\frac{1}{2}$ "	4 $\frac{1}{2}$ "	15 $\frac{3}{4}$ "	14 $\frac{1}{4}$ "
5"	8 $\frac{1}{4}$ "	20"x20"	10 $\frac{1}{2}$ "	UNIT OF VARIATION	4 $\frac{1}{2}$ "	16 $\frac{1}{4}$ "	14 $\frac{3}{4}$ "
6"	9 $\frac{1}{4}$ "	20"x20"	10 $\frac{1}{2}$ "	4"	4 $\frac{1}{2}$ "	16 $\frac{3}{4}$ "	15 $\frac{1}{4}$ "
8"	11 $\frac{1}{4}$ "	24"x24"	SPEC.	4"	4 $\frac{1}{2}$ "	17 $\frac{3}{4}$ "	17 $\frac{3}{4}$ "

DIMENSION TABLE

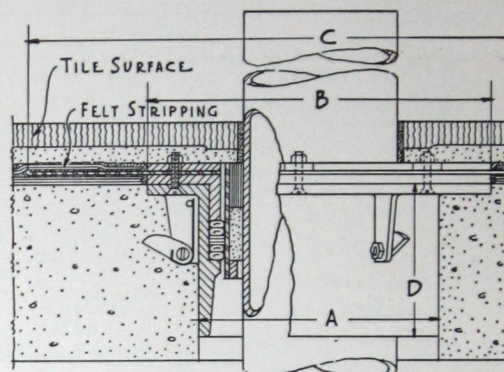
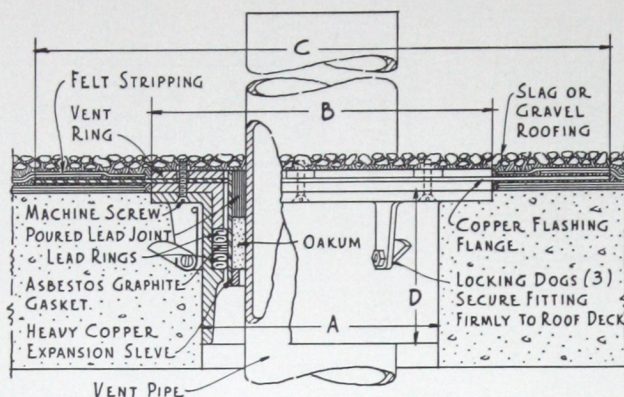
Barrett



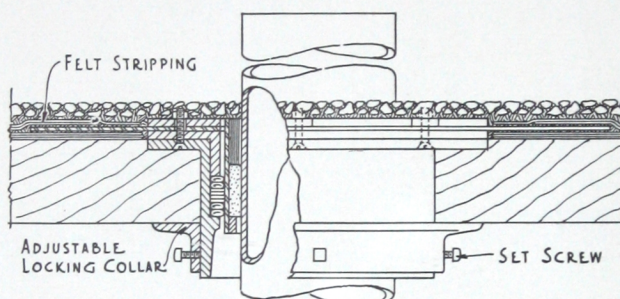
BARRETT ROOF DRAINAGE SYSTEM

METHOD OF INSTALLING HOLT VENT CONNECTIONS

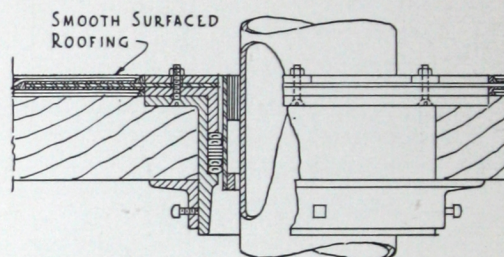
FOR TYPES 6-VG, 6-VS, 6-VT & 6-VM



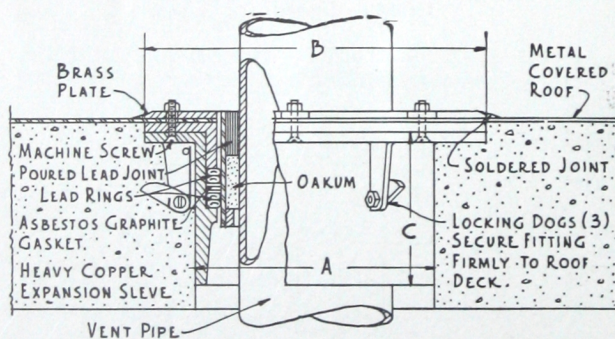
TILE OR SIMILAR SURFACE TYPE 6-VT



SLAG OR GRAVEL SURFACE TYPE 6-VG



SMOOTH SURFACE TYPE 6-VS



METAL COVERED ROOFS TYPE 6-VM

These types used on flat roofs for soil and waste vent stacks, flag-poles, supply pipes or any similar fixture carried through the roof deck.

SPECIFICATION

The opening through roof deck shall be of proper size to receive Roof Vent Connection and shall be concentric with vent pipe.

Barrett Holt Roof Vent Connection Type . . . shall be installed at all vent openings and shall be of proper size to connect with . . . inch vent pipe as shown on Drawing No. . . .

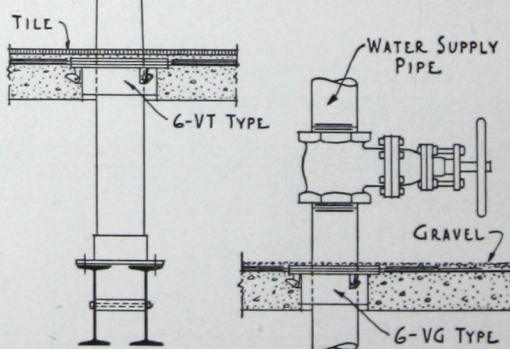
Holt Roof Vent Connections shall be installed and connected complete in strict accordance with directions of manufacturer.

Where built-up roofing is used as a roof covering, two plies of felt thoroughly embedded in hot bitumen shall be applied over the entire copper flashing flange, the outer edge of the first ply to extend beyond the flange not less than three (3) inches and of the second ply not less than six (6) inches before the application of finished surfacing.

Note: Where gypsum or wood roof decks exceed 3 1/2 inches in thickness, Connections are equipped with threaded stud bolts which hold adjustable locking collar in place.

SIZE OF PIPE	A	B	C	D
3"	6 1/4"	8 3/4"	16"x16"	4 1/2"
4"	7 1/4"	9 3/4"	18"x18"	4 1/2"
5"	8 1/4"	10 3/4"	20"x20"	4 1/2"
6"	9 1/4"	11 3/4"	20"x20"	4 1/2"
8"	11 1/4"	14 3/8"	24"x24"	4 1/2"

DIMENSION TABLE



6-V TYPES CAN BE USED FOR WATER PIPES, FLAGPOLES, FIRE LINES, ETC.

Barrett

SECTION 5

Waterproofing Specifications and Details

WATERPROOFING in some form is essential to the life and stability of many structures. Just what this form should be is a problem not exactly determinable by precise mathematical calculation. However, with a careful study of conditions, with the knowledge of definite factors and with the help of past experience, a form or method of waterproofing may be devised for the specific conditions encountered. Proper waterproofing materials, intelligently selected and skillfully applied, are vital factors in making engineering structures watertight.

These specifications concern the use of the membrane method of waterproofing. This method correctly followed not only protects but prolongs the life of any structure and has been successfully used over a long period of years. It provides an elastic and continuous bituminous waterproofing blanket, composed of layers of waterproofing felt or fabric, homogeneously cemented with suitable waterproofing bitumen.

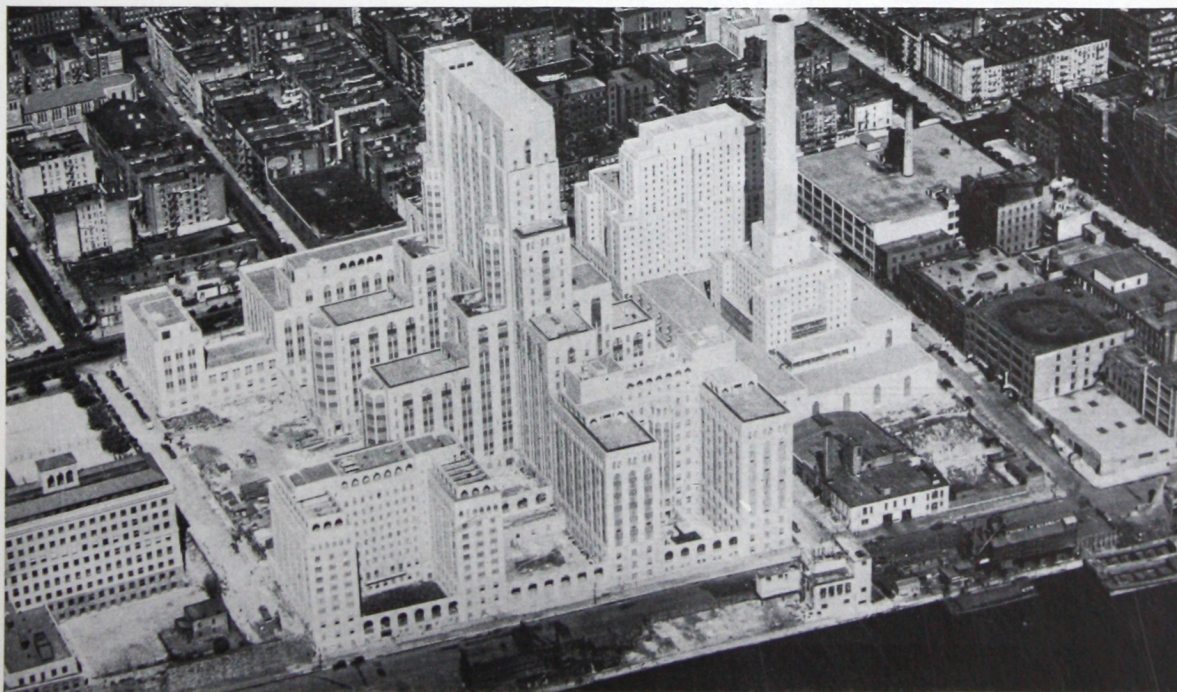
The use of the membrane system applies generally to the waterproofing of structures exposed to hydrostatic

pressure or conditions of dampness or moisture, particularly those below ground surface, such as foundations of buildings, tunnels, subways, or other forms of sub-construction. It is equally adaptable to the waterproofing of reservoirs, bridges, retaining walls, etc.

The following specifications treat with specific conditions. The materials specified are prepared expressly for waterproofing purposes and are definitely suited to the conditions under which they are required to function. The application methods described are accepted as standard practice.

Barrett Approved Waterproofing Contractors are skilled in the art of waterproofing. Their employment on specific installations in accordance with the specifications outlined warrants the obtaining of most satisfactory results.

The services of our Construction Service Department are available for consultation or co-operation in the preparing of specifications or handling of unusual installations not incorporated in this section.



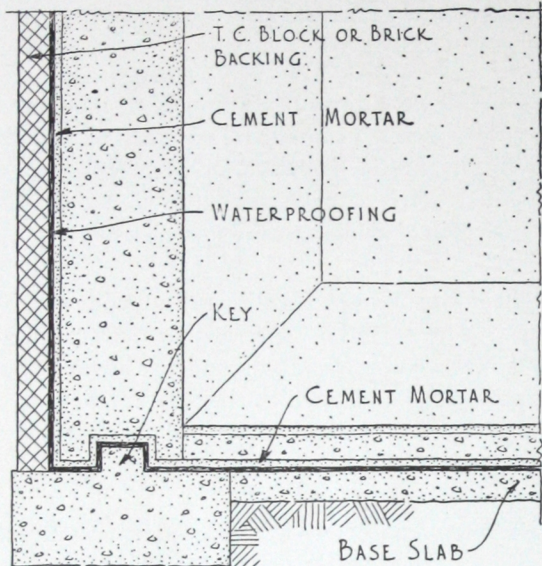
New York Hospital & Cornell Medical College, New York City—Roofed and Waterproofed with Barrett Materials



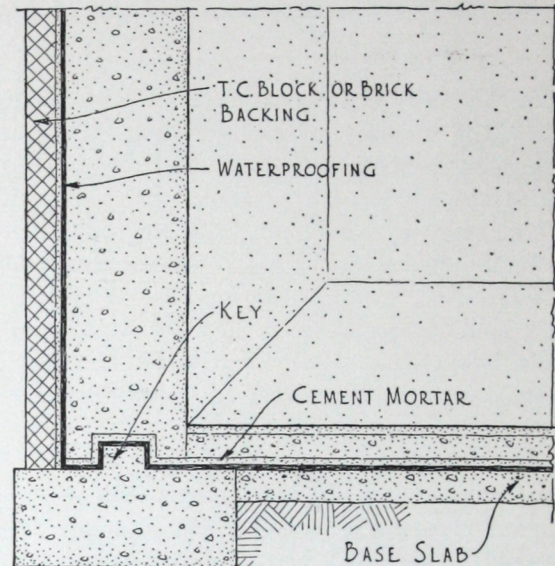
BARRETT WATERPROOFING SYSTEM

MEMBRANE METHOD

SUBSTRUCTURE WATERPROOFING



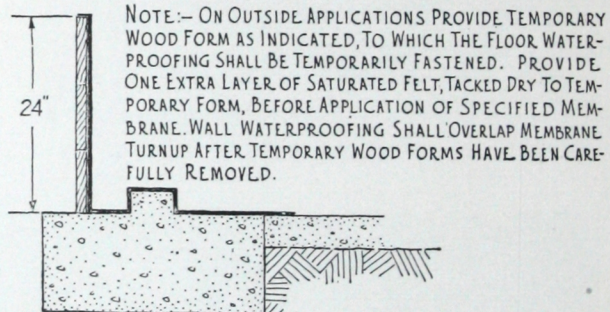
WATERPROOFING DETAIL FOR
OUTSIDE WALLS, FOOTINGS ETC.
- INSIDE APPLICATION -



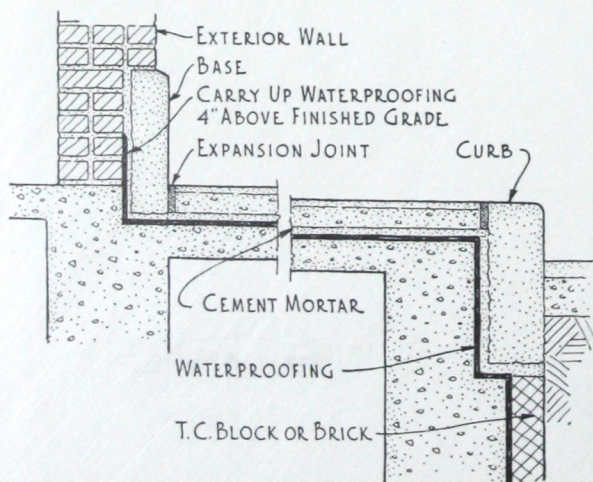
WATERPROOFING DETAIL FOR
OUTSIDE WALLS, FOOTINGS ETC.
- OUTSIDE APPLICATION -

NOTE:-
ON INSIDE APPLICATIONS WATERPROOFING MEMBRANE,
AS SPECIFIED, IS APPLIED DIRECTLY TO THE TILE OR BRICK
BACKING AS INDICATED

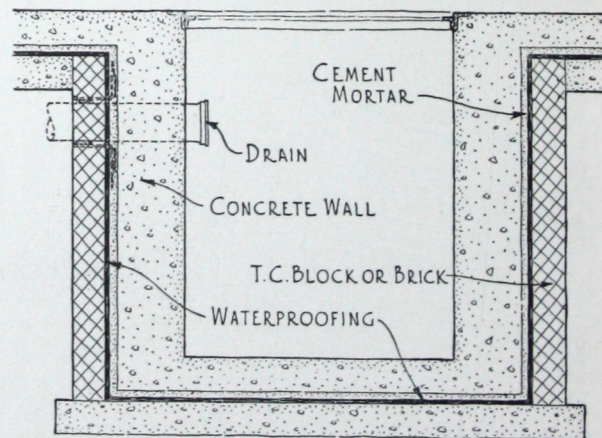
IMPORTANT -
ALL MASONRY SHALL BE DESIGNED TO WITHSTAND
THE MAXIMUM HYDROSTATIC PRESSURE.
SEE PLATE 36 FOR WATERPROOFING SPECIFICATIONS.



NOTE:- ON OUTSIDE APPLICATIONS PROVIDE TEMPORARY
WOOD FORM AS INDICATED, TO WHICH THE FLOOR WATER-
PROOFING SHALL BE TEMPORARILY FASTENED. PROVIDE
ONE EXTRA LAYER OF SATURATED FELT, TACKED DRY TO TEM-
PORARY FORM, BEFORE APPLICATION OF SPECIFIED MEM-
BRANE. WALL WATERPROOFING SHALL OVERLAP MEMBRANE
TURNUP AFTER TEMPORARY WOOD FORMS HAVE BEEN CARE-
FULLY REMOVED.



WATERPROOFING DETAIL FOR
VAULTS & TUNNELS



WATERPROOFING DETAIL FOR
SUMPS & PITS

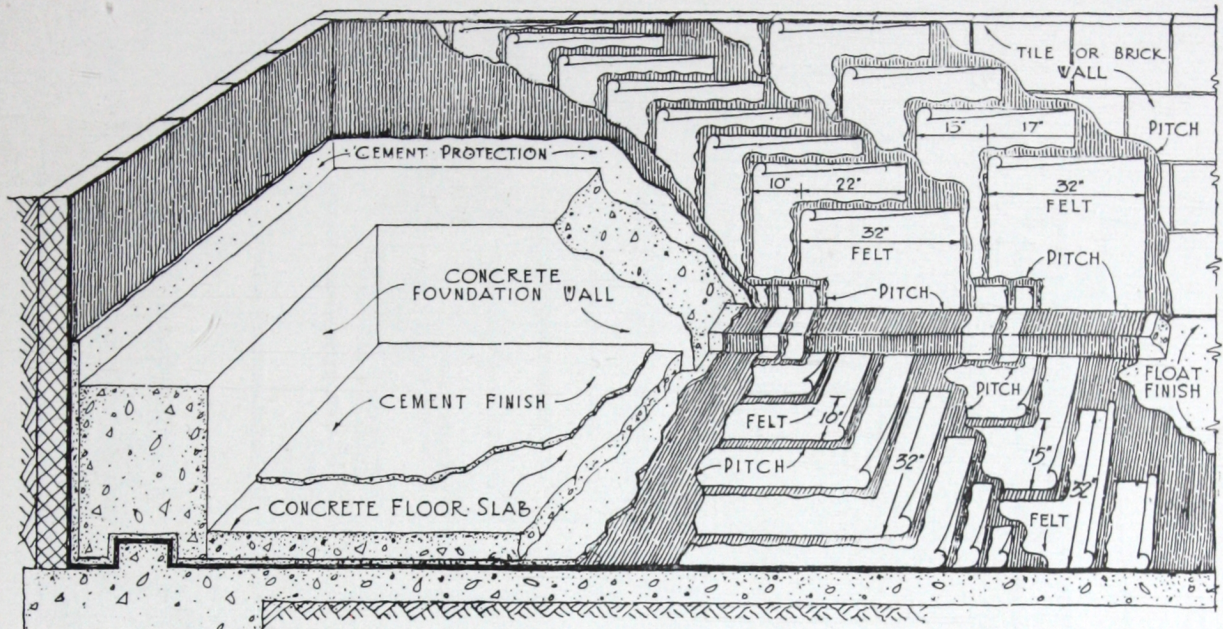
Barrett



BARRETT WATERPROOFING SYSTEM

MEMBRANE METHOD

SUBSTRUCTURE WATERPROOFING



DETAIL FOR SUBSTRUCTURE WATERPROOFING - 5 PLY CONSTRUCTION

IMPORTANT—All Masonry Shall be Designed to Withstand Maximum Hydrostatic Pressure

SPECIFICATION

The waterproofing shall be applied by a waterproofing contractor approved by THE BARRETT COMPANY, who has had experience in successfully applying this type of built-up waterproofing on sub-grade construction, and who can refer to work of a similar nature that he has executed in a satisfactory manner.

All surfaces on which the waterproofing is to be applied shall be firm, smooth and dry, and free from loose materials, and shall be covered by a membrane of continuous waterproofing consisting of..... plies of Specification Tarred Felt and..... moppings of Specification Waterproofing Pitch.

First—Coat the entire surface on which the waterproofing is to be applied, with Specification Waterproofing Pitch into which, while hot, embed a layer of Specification Felt, following this with alternating moppings of Pitch and layers of Felt until..... moppings of Pitch and..... layers of Felt have been applied. Each layer of Felt shall be thoroughly rubbed into the hot Pitch, and the entire surface shall be immediately mopped with Pitch to insure thorough embedding of the Felt. The Felt shall be laid without wrinkles or buckles, and the finished membrane shall be free from pockets or blisters.

Second—Not less than.....* pounds of Waterproofing Pitch shall be used for constructing each one hundred (100) square feet of completed waterproofing, and the Pitch shall not be heated above three hundred and fifty (350) degrees, Fahrenheit.

Third—At wall angles and footings and places where the waterproofing may be subjected to unusual strain, there shall be applied not less than two (2) extra reinforcing layers of Felt and alternating moppings of Pitch.

Fourth—Where laps are left to be connected, they shall be not less than ten (10) inches wide, and shall be temporarily protected by one-half ($\frac{1}{2}$) inch troweled course of Portland Cement Mortar. When connections with laps are made, laps shall be carefully cleaned, dry,

and mopped with Pitch before proceeding with the work.

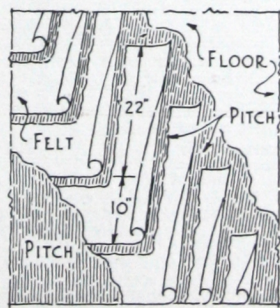
Fifth—Care shall be taken not to injure the waterproofing membrane either during application or after completion, and all finished work shall be approved before construction of permanent protective finish or wall.

Sixth—The waterproofing shall be immediately protected by tile, brick, concrete or similar material as specified.

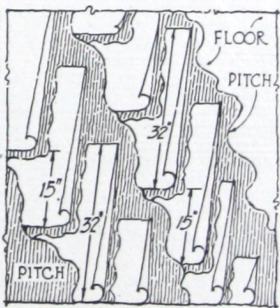
**Architect's Note*—For five (5) ply construction six (6) alternating moppings of Pitch shall be required, and not less than two hundred and ten (210) pounds of Waterproofing Pitch shall be used for constructing each one hundred (100) square feet of completed waterproofing.

For four (4) ply construction five (5) alternating moppings of Pitch shall be required, and not less than one hundred and seventy-five (175) pounds of Waterproofing Pitch shall be used for constructing each one hundred (100) square feet of completed waterproofing.

For three (3) ply construction four (4) alternating moppings of Pitch shall be required, and not less than one hundred and forty (140) pounds of Waterproofing Pitch shall be used for constructing each one hundred (100) square feet of completed waterproofing.



DETAIL FOR
3 PLY CONSTRUCTION



DETAIL FOR
4 PLY CONSTRUCTION

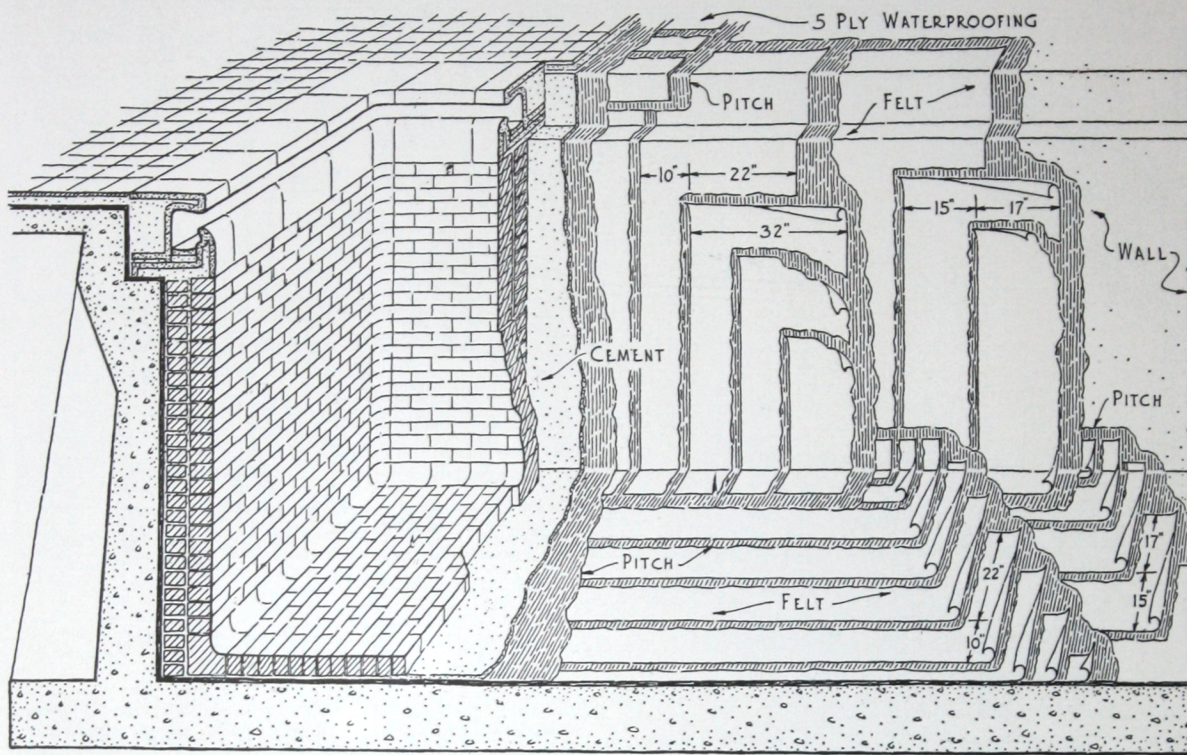




BARRETT WATERPROOFING SYSTEM

MEMBRANE METHOD

FOR SWIMMING POOLS, SHOWER ROOMS ETC.



IMPORTANT—All Masonry Shall Be Designed To Withstand Maximum Hydrostatic Pressure

SPECIFICATIONS

The waterproofing shall be applied by a waterproofing contractor approved by THE BARRETT COMPANY, who has had experience in successfully applying this type of built-up waterproofing on swimming pool construction and who can refer to work of a similar nature that he has executed in a satisfactory manner.

All surfaces on which the waterproofing is to be applied shall be firm, smooth and dry, and free from loose materials, and shall be covered by a membrane of continuous waterproofing consisting of five (5) plies of Specification Tarred Felt and six (6) moppings of Specification Pitch.

FIRST—Coat the entire surface on which the waterproofing is to be applied with Specification Pitch into which, while hot, lay two (2) plies of Specification Tarred Felt, lapping each sheet seventeen (17) inches over preceding one, mopping with Specification Pitch the full seventeen (17) inch lap on each sheet, so that in no place shall Felt touch Felt.

SECOND—Coat the entire surface uniformly with Specification Pitch into which, while hot, lay three (3) plies of Specification Tarred Felt, lapping each sheet twenty-two (22) inches over preceding one, mopping with Specification Pitch the full twenty-two (22) inch lap on each sheet, so that in no place shall Felt touch Felt. All Felt shall be thoroughly and smoothly embedded into the hot Pitch, shall be laid without wrinkles or buckles, and the finished membrane shall be free from pockets or blisters.

THIRD—Coat the entire surface with a heavy uniform mopping of Specification Pitch.

FOURTH—Not less than two hundred and ten (210) pounds of Pitch shall be used for constructing each one hundred (100) square feet of completed waterproofing and the Pitch shall not be heated above four hundred (400) degrees, Fahrenheit.

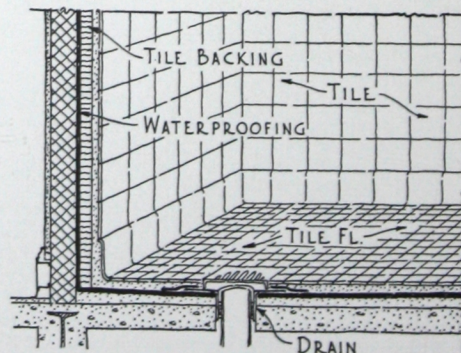
FIFTH—At wall angles and footings and places where the waterproofing may be subjected to unusual strain, there shall be applied not less than two (2) extra reinforcing layers of Felt and alternating moppings of Pitch.

SIXTH—Where laps are left to be connected, they shall be not less than ten (10) inches wide and shall be temporarily protected by one-half (½) inch troweled course of Portland Cement Mortar. When connections with laps are made, laps shall be carefully cleaned, dry, and mopped with Pitch before proceeding with the work.

SEVENTH—Care shall be taken not to injure the waterproofing membrane either during application or after completion, and all finished work shall be approved before construction of permanent protective finish.

EIGHTH—The waterproofing shall be immediately protected by tile, brick, concrete or similar material (as specified) and a continuous course of at least one-half (½) inch of cement mortar, one to two mix, applied directly over the waterproofing membrane before such finished course is installed.

Note—Where swimming pool is provided with steam coil or hot water inlet, all such pipes shall be thoroughly insulated.



DETAIL FOR SHOWER ROOM

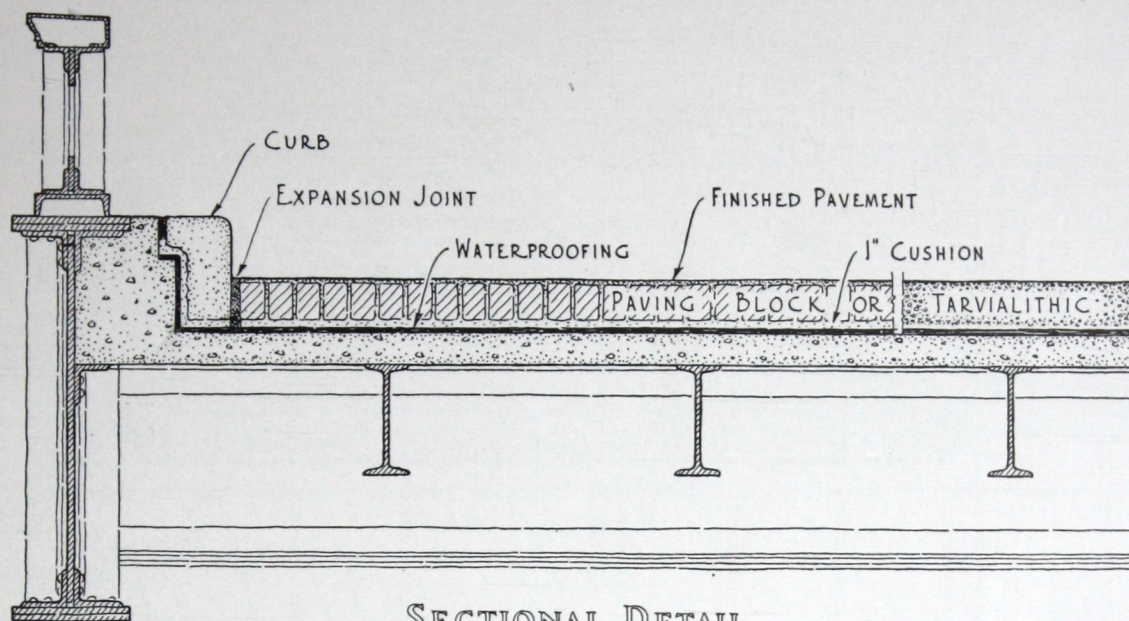
Barrett



BARRETT WATERPROOFING SYSTEM

MEMBRANE METHOD

FOR ELEVATED HIGHWAYS OR BRIDGES, RAMPS ETC



SECTIONAL DETAIL

SPECIFICATION

The waterproofing shall be applied by a Waterproofing Contractor approved by THE BARRETT COMPANY, who has had experience in successfully applying this type of Built-Up Waterproofing, and who can refer to work of a similar nature that he has executed in a satisfactory manner.

All surfaces on which the waterproofing is to be applied shall be firm, smooth, dry, and free from loose materials, and shall be covered by a membrane of continuous waterproofing consisting of plies of Specification Tarred Felt and moppings of Specification Waterproofing Pitch.

First—Coat the entire surface on which the waterproofing is to be applied, with Specification Waterproofing Pitch, into which, while hot, embed a layer of Specification Felt, following this with alternating moppings of Pitch and layers of Felt until moppings of Pitch and layers of Felt have been applied. Each layer of Felt shall be thoroughly rubbed into the hot Pitch, and the entire surface shall be immediately mopped with Pitch to insure thorough embedment of the Felt. The Felt shall be laid without wrinkles or buckles, and the finished membrane shall be free from pockets or blisters.

Second—Spread over the entire surface a heavy uniform coating of Specification Waterproofing Pitch.

Third—Not less than* pounds of Waterproofing Pitch shall be used for constructing each one hundred (100) square feet of completed waterproofing, and the Pitch shall not be heated above three hundred fifty (350) degrees Fahrenheit.

Fourth—At wall angles, curbs, deflection joints, and places where the waterproofing may be subjected to unusual strain, there shall be applied not less than two (2) extra reinforcing layers of Felt and alternating moppings of Pitch.

Note—This specification covers application for waterproofing membrane of pitch and felt. For alternate types and details, see pages 56 and 57.

Fifth—Where laps are left to be connected, they shall be not less than ten (10) inches wide and shall be temporarily protected by one-half ($\frac{1}{2}$) inch troweled coarse of Portland Cement Mortar. When connections with laps are made, laps shall be carefully cleaned, dry, and mopped with Pitch before proceeding with the work.

Sixth—Felt and Pitch membrane shall be carried up curbs, walls, and areas around columns, pipes, etc., not less than four (4) inches above the finished wearing surface.

Seventh—Care shall be taken not to injure the waterproofing membrane either during application or after completion, and all finished work shall be approved before construction of permanent finished wearing surface.

Eighth—The finished wearing surface as specified, shall be immediately installed over the waterproofing membrane.

NOTES

1. Expansion joints shall be provided throughout the finished wearing surface. All such expansion joints shall extend from the top of the finished wearing surface through to the waterproofing membrane.

2. Where outlets or scuppers are provided as indicated on drawings, they shall be placed level with the waterproofing coarse and properly Felt-stripped.

**Architects' Note*—For five (5) ply construction, Felt shall be laid after the two (2), two (2) and one (1) method, with alternating moppings of Waterproofing Pitch throughout. Not less than two hundred ten (210) pounds of Waterproofing Pitch shall be used for constructing each one hundred (100) square feet of completed Waterproofing.

For four (4) ply construction not less than one hundred seventy-five (175) pounds of Waterproofing Pitch shall be used for constructing each one hundred (100) square feet of completed Waterproofing.

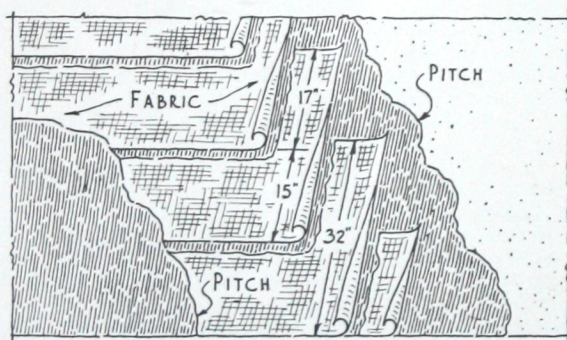
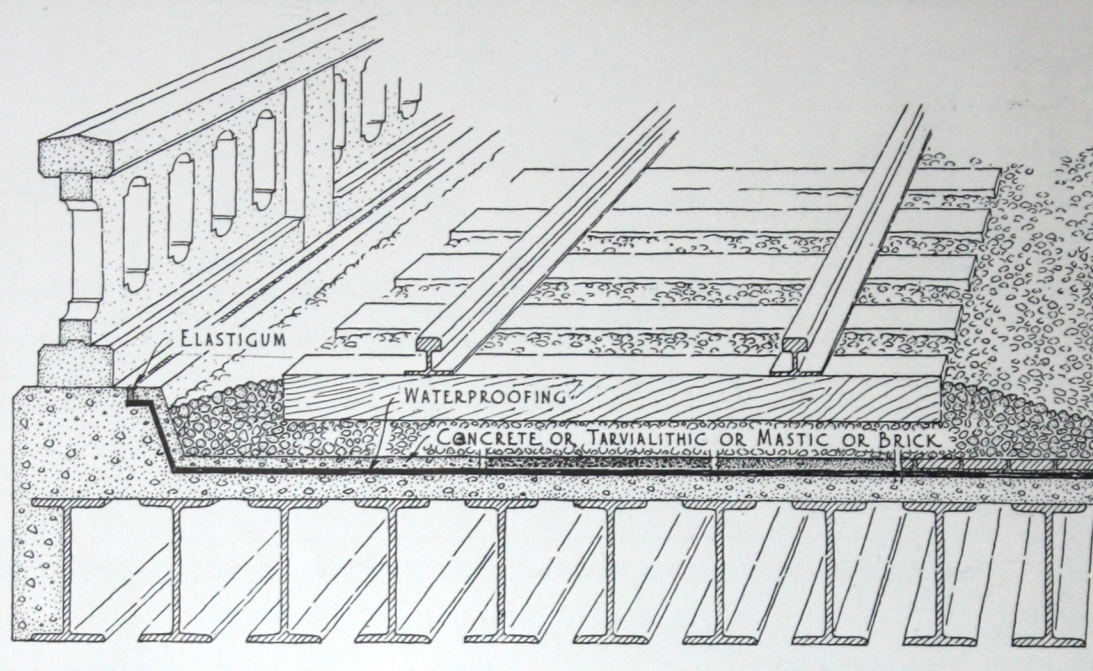
Barrett



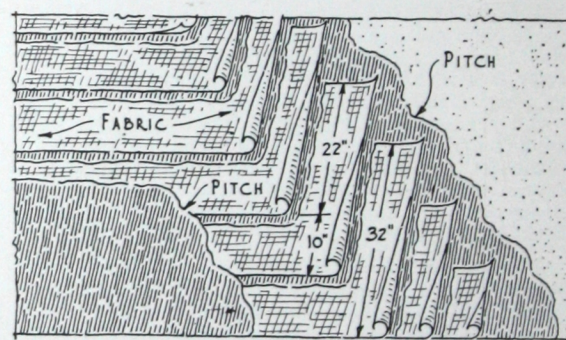
BARRETT WATERPROOFING SYSTEM

MEMBRANE METHOD

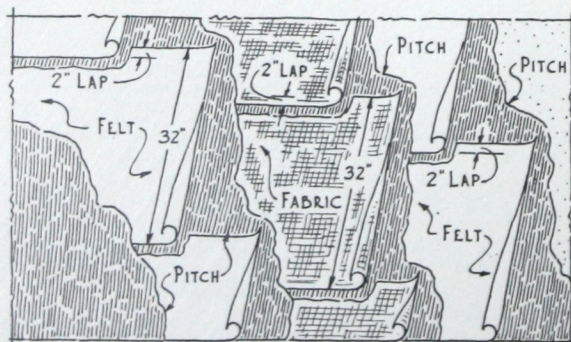
FOR SOLID DECK RAILROAD BRIDGES



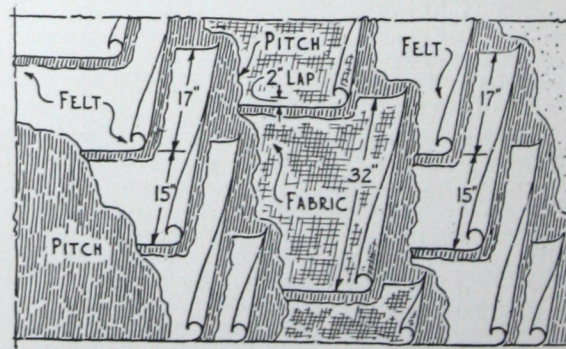
FABRIC TYPE - 2 PLY



FABRIC TYPE - 3 PLY



COMBINATION FELT & FABRIC - 3 PLY

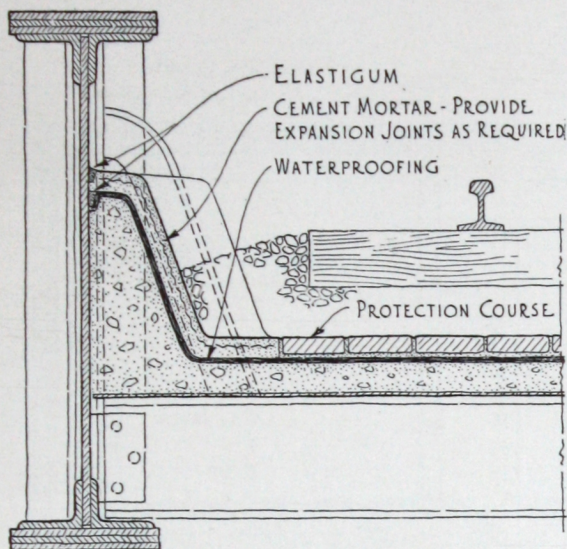


COMBINATION FELT & FABRIC - 5 PLY

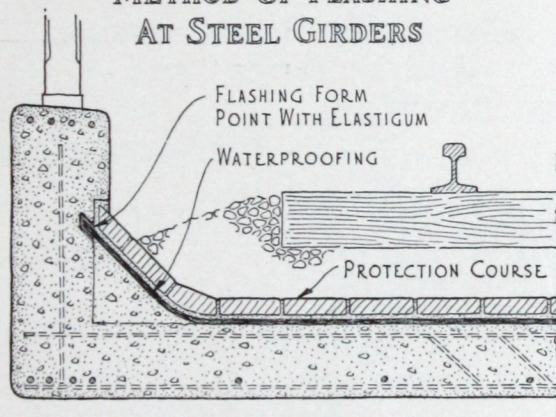
Barrett



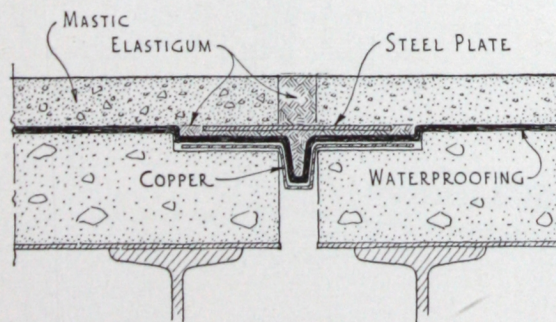
BARRETT WATERPROOFING SYSTEM FLASHING DETAILS FOR SOLID DECK RAILROAD BRIDGES



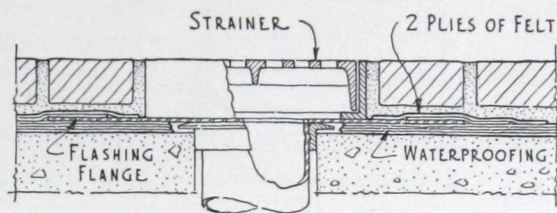
METHOD OF FLASHING
AT STEEL GIRDERS



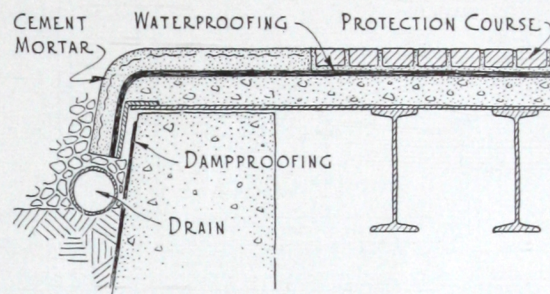
METHOD OF FLASHING
AT CONCRETE CURBS



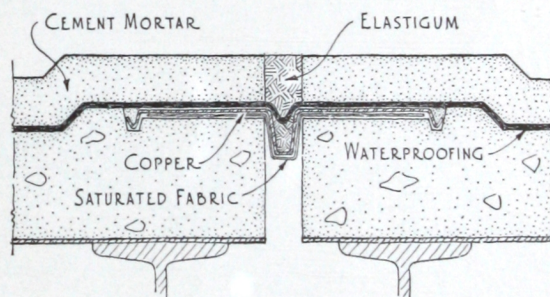
DETAIL OF EXPANSION JOINT
MASTIC PROTECTION COURSE



DETAIL OF DECK DRAIN



DETAIL OF WATERPROOFING
AT EXPANSION END



DETAIL OF EXPANSION JOINT
CONCRETE PROTECTION COURSE

The membrane method of waterproofing is recommended for use on solid deck railroad bridges or other bridges, ramps, highways, etc.

The types detailed conform to methods recommended by the American Railway Engineering Association, and incorporate the use of Barrett Waterproofing Pitch and/or Tarred Felt and/or Waterproofing Fabric.

Architect or Engineer shall clearly indicate type to be used and specifications shall follow A.R.E.A. standards or form as outlined on Page 55.

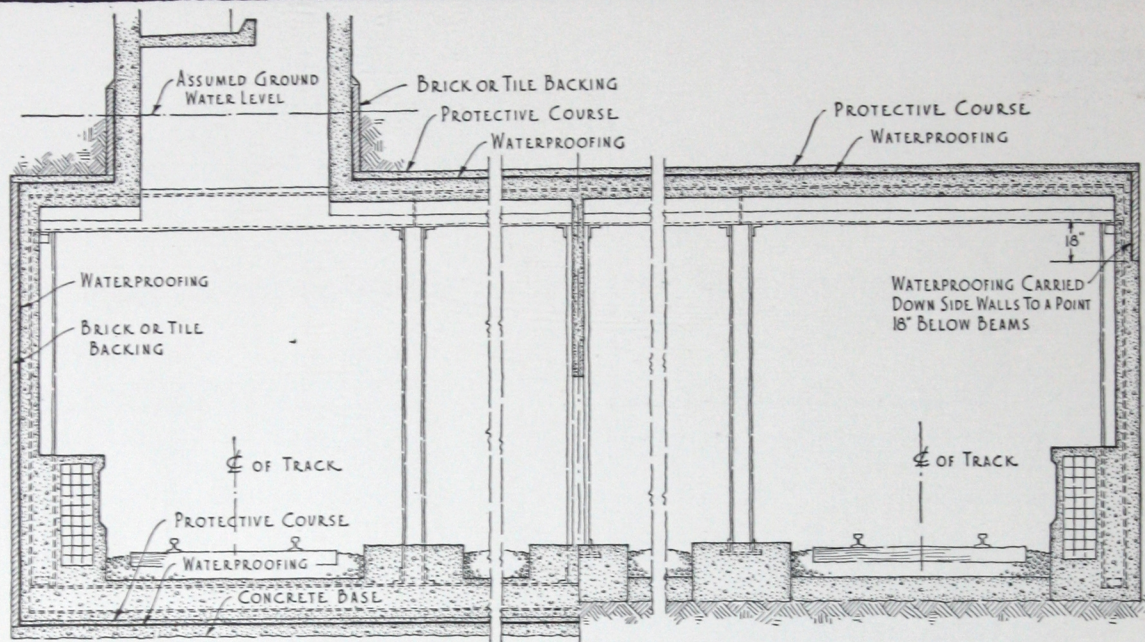
Barrett



BARRETT WATERPROOFING SYSTEM

MEMBRANE METHOD

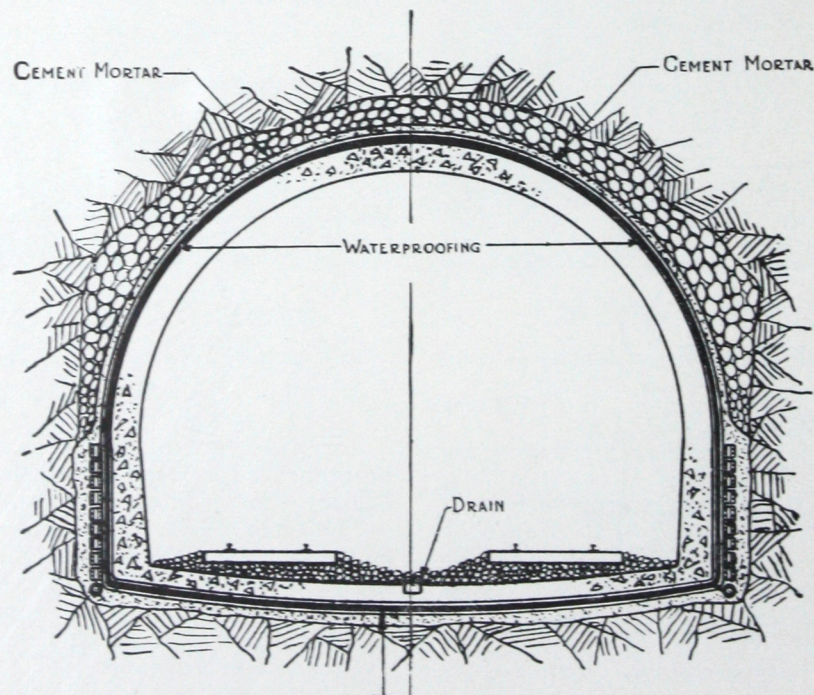
FOR UNDERGROUND SUBWAYS, TUNNELS, ETC.



1/2 SECTION SHOWING PROTECTION
AGAINST WATER PRESSURE

1/2 SECTION SHOWING PROTECTION
AGAINST SURFACE WATER

TYPICAL SUBWAY SECTIONS



TYPICAL TUNNEL SECTION

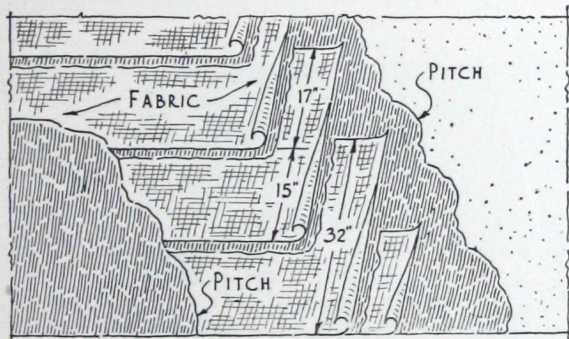
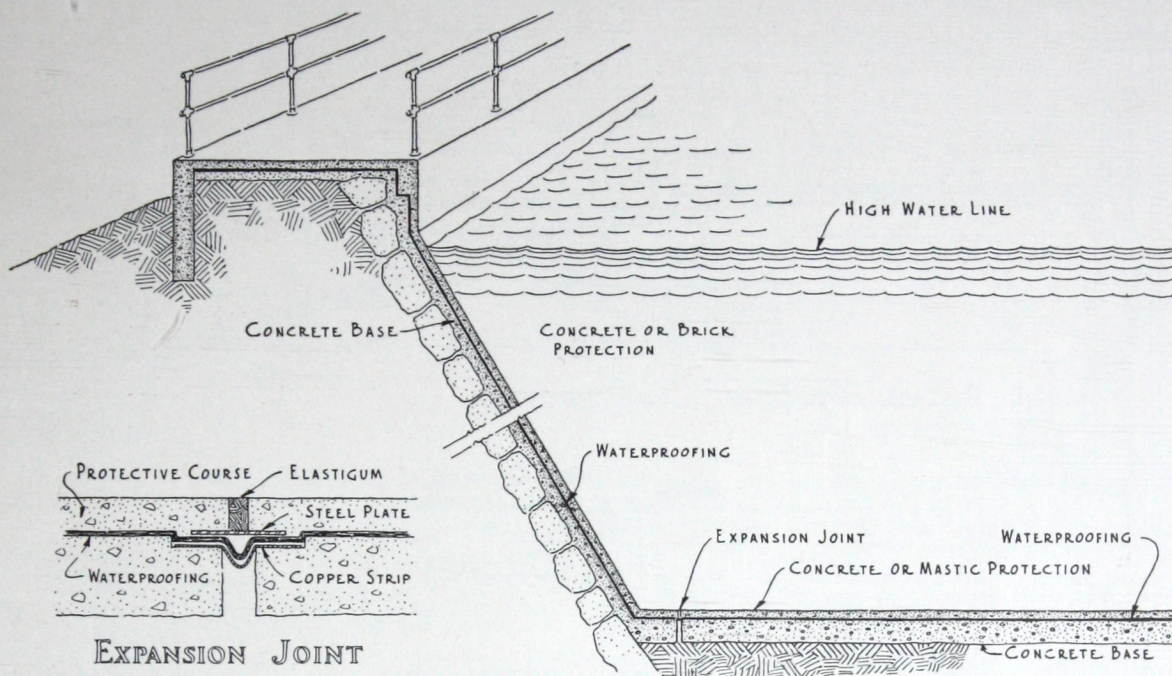
Note—For types of membrane waterproofing and specification form, refer to pages 53, 56 and 57.



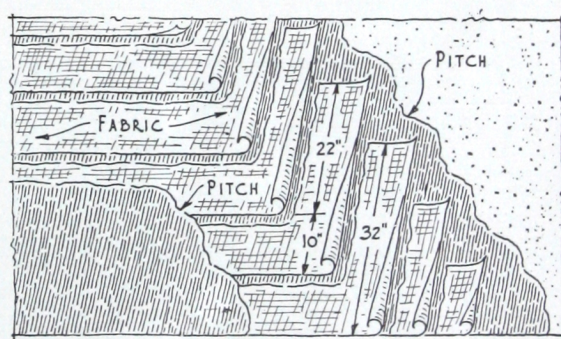


BARRETT WATERPROOFING SYSTEM

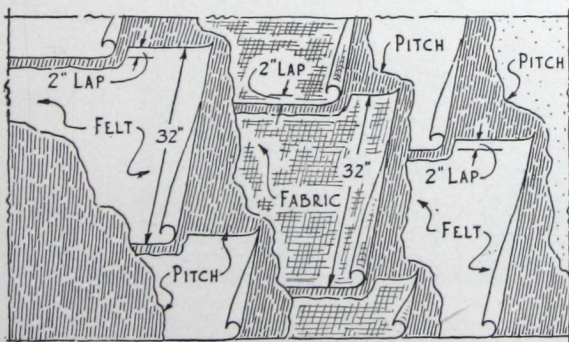
MEMBRANE METHOD
FOR RESERVOIRS, BASINS, ETC.



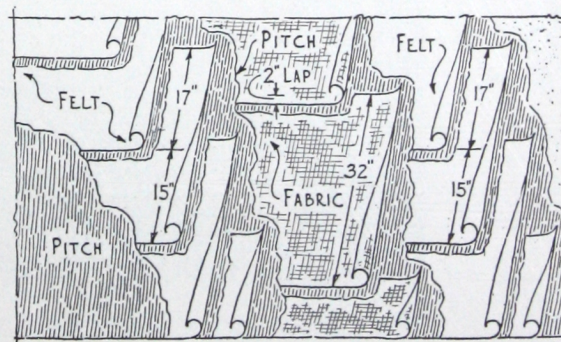
FABRIC TYPE - 2 PLY



FABRIC TYPE - 3 PLY



COMBINATION FELT & FABRIC - 3 PLY



COMBINATION FELT & FABRIC - 5 PLY

Note—For additional types of membrane waterproofing and specification form, refer to pages 54, 56 and 57.

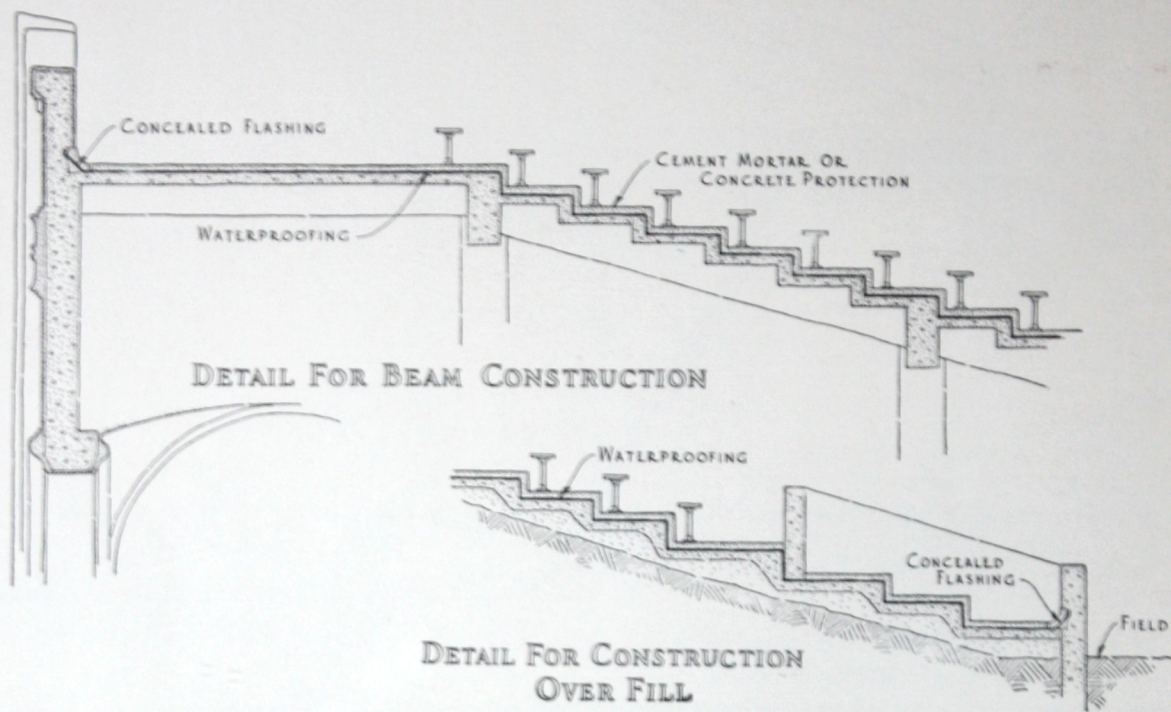
Barrett



BARRETT WATERPROOFING SYSTEM

MEMBRANE METHOD

FOR STADIUM OR ARENA CONSTRUCTION

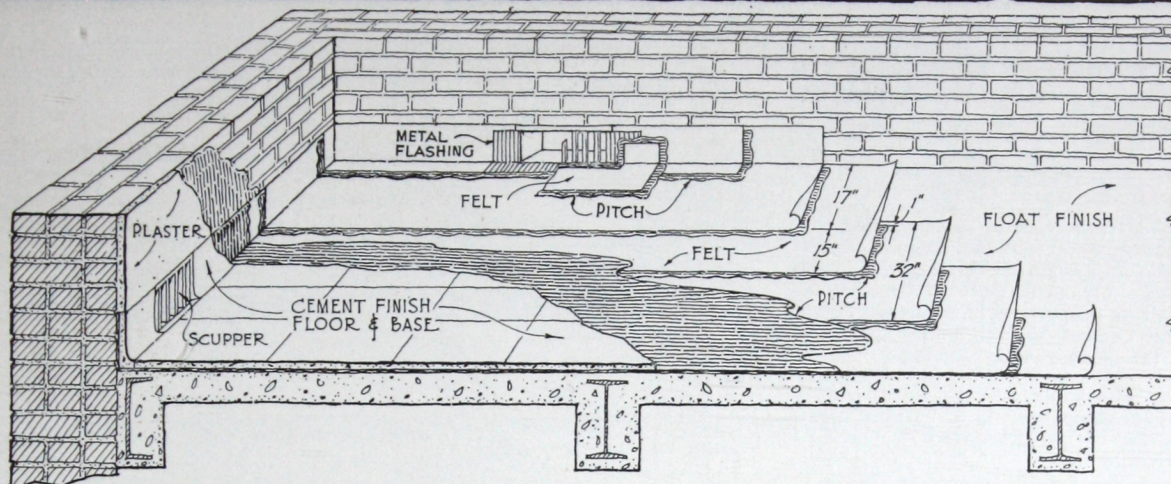


Barrett Specification Materials Used for Waterproofing in the Yale Bowl, New Haven, Conn.

Note—For types of membrane waterproofing and specification form, refer to pages 55, 56 and 57.

Barrett

BARRETT WATERPROOFING SYSTEM MEMBRANE METHOD FOR SUPERSTRUCTURE, CONCRETE OR WOOD FLOORS



This System of Waterproofing is Designed for the Purpose of Providing a Factor of Safety Against Water Damage From Operation of Sprinkling System, or in Case of Fire, Washing of Floors, etc.

SPECIFICATION

First—Over the entire surface lay two (2) plies of Specification Felt, lapping each sheet seventeen (17) inches over preceding one, mopping with Specification Pitch the full seventeen (17) inch lap on each sheet, so that at no place, shall Felt touch Felt; after which spread over the entire surface a heavy uniform coating of Specification Pitch.

Second—Not less than seventy-five (75) pounds of Pitch shall be used for constructing each one hundred (100) square feet of completed waterproofing, and the Pitch shall not be heated above four hundred (400) degrees Fahrenheit.

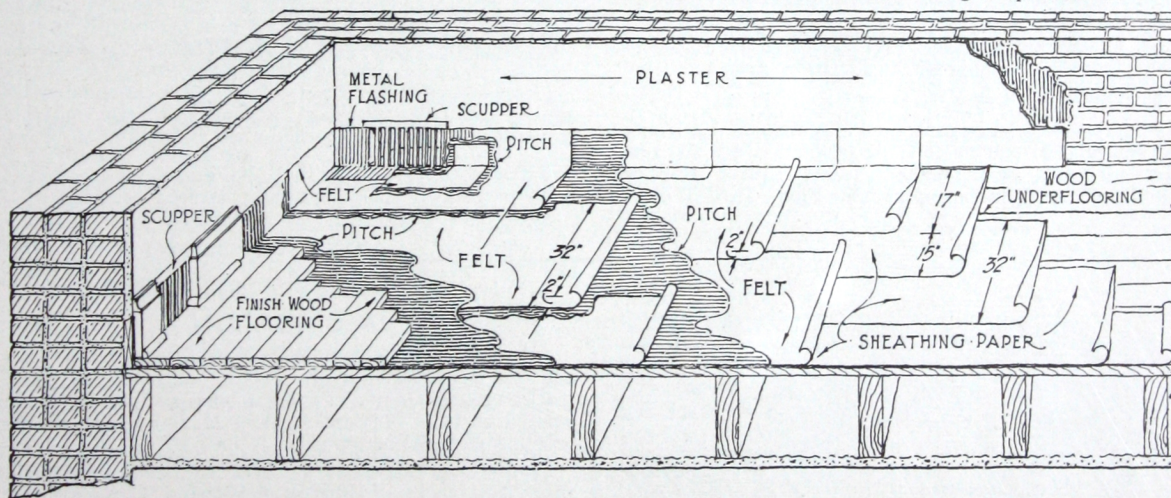
Third—At places where the waterproofing may be subjected

to unusual strain, there shall be applied not less than two (2) extra reinforcing layers of Felt and alternating moppings of Pitch.

Fourth—Felt and Pitch membrane shall be carried up walls and areas around columns, pipes, etc., not less than three (3) inches above the finished flooring, and shall be properly fastened in place and protected.

Fifth—Care shall be taken not to injure the waterproofing membrane either during application or after completion, and all finished work shall be approved before construction of permanent finished flooring.

Sixth—The waterproofing shall be immediately protected by the application of the finished flooring as specified.



SPECIFICATION

First—Over the entire surface lay two (2) thicknesses of sheathing paper or unsaturated felt, weighing not less than five (5) pounds per one hundred (100) square feet, lapping each sheet seventeen (17) inches over the preceding one, and nail as often as is necessary to hold in place.

Second—Over the entire surface lay one (1) ply of Specification Felt, lapping each sheet two (2) inches over preceding one and nail as often as is necessary to hold in place.

Third—Coat the entire surface uniformly with Specification Pitch, after which over the entire surface lay one (1) ply of Specification Felt, lapping each sheet two (2) inches over preceding one, and mopping the two (2) inch lap on each sheet with Specification Pitch, so that no places shall Felt touch Felt. Care shall be taken that all layers of Felt break joints with underlying layers.

Fourth—Over the entire surface spread a heavy uniform coating of Specification Pitch, into which, while hot, embed floor plank.

Fifth—Not less than seventy-five (75) pounds of Pitch shall be used for constructing each one hundred (100) square feet of completed waterproofing, and the Pitch shall not be heated above four hundred (400) degrees, Fahrenheit.

Sixth—(Same as paragraph "Third" at top of page.)

Seventh—(Same as paragraph "Fourth" at top of page.)

Eighth—(Same as paragraph "Fifth" at top of page.)

Ninth—The waterproofing shall be immediately protected by the application of the finished flooring as specified. Each plank shall be set in permanent position before nailing to prevent the nails from tearing the waterproofing membrane, and in no case shall the nails penetrate the flooring upon which the waterproofing rests.

Barrett



BARRETT DAMPPROOFING SYSTEM FOR RETAINING WALLS, ABUTMENTS, MASONRY WALLS ETC.



For Abutments and Foundations of Brick
or Concrete Masonry Where Back-fill is
Provided

SPECIFICATION

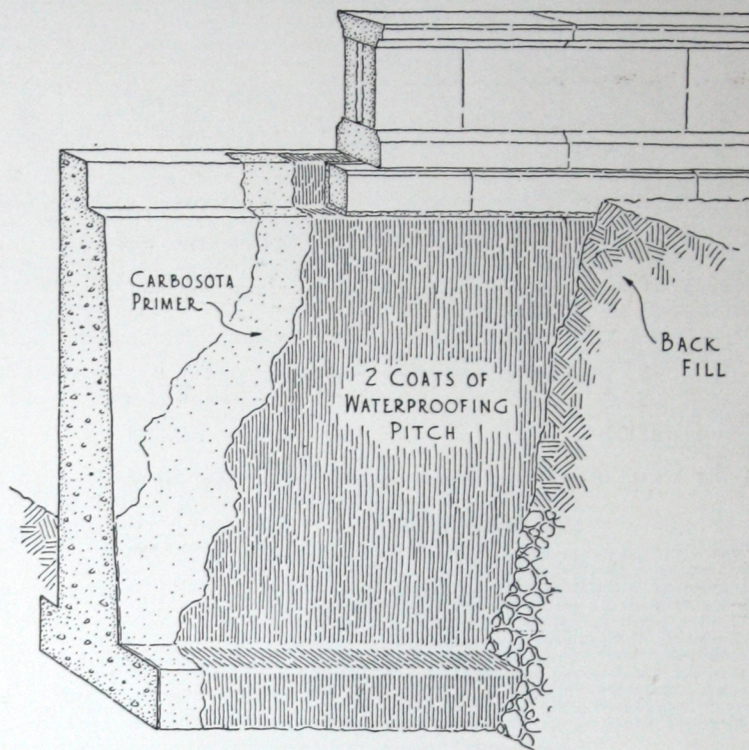
All surfaces to be dampproofed shall be dry and clean and free from dirt, dust or foreign materials. All voids, cracks or open joints in the masonry shall be properly pointed up with Portland Cement Mortar before application of the dampproofing materials.

First—Apply over the entire surface to be dampproofed, a uniform prime coating of Barrett Carbosota, Grade 1, Creosote Oil.

Second—The priming coat of Carbosota shall be allowed to sufficiently penetrate the masonry, and before thoroughly dry, apply a uniform mop coating of Specification Waterproofing Pitch. The Pitch shall be applied in such manner as will obtain a heavy continuous coating of Waterproofing Pitch over the entire surface, filling all cracks, voids and crevices and upon completion shall present a dry, glossy appearance.

Third—After the entire surface has been completely covered with first mopping, follow immediately with second heavy uniform mopping of Specification Waterproofing Pitch.

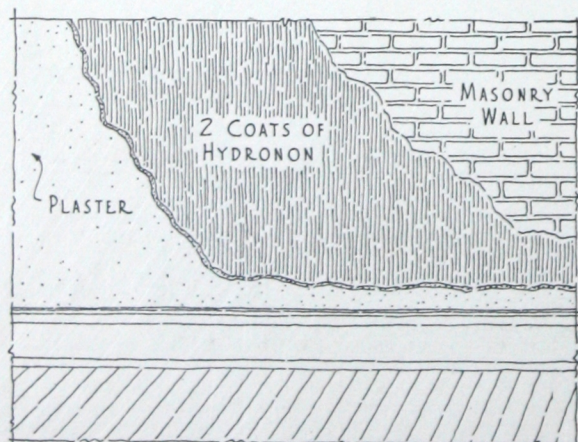
Fourth—Not less than one (1) gallon of Carbosota and eighty (80) pounds of Waterproofing Pitch shall be used for each one hundred (100) square feet of completed dampproofing and the Pitch shall not be



PITCH COATING METHOD

heated above three hundred and fifty (350) degrees Fahrenheit.

Fifth—Dampproofing shall be immediately covered with permanent back-fill, solidly tamped in place.



HYDRONON METHOD

Hydronon Method—For Brush Treatments

SPECIFICATION

All surfaces to be dampproofed shall be dry and clean and free from dirt, dust or foreign materials. All voids, cracks or open joints in the masonry shall be properly pointed up with Portland Cement Mortar before dampproofing material is applied.

First—Over all wall surfaces to be dampproofed, apply two coats of Barrett Hydronon Dampproofing Paint. The first coat shall be well brushed into the surface in such manner as will fill all voids and crevices and shall be allowed to dry for at least twelve (12) hours before application of the second coat.

Second—The second coat of Hydronon shall be applied in a free and even manner so that a smooth and glossy finish is provided at all points.

NOTE

1. Where dampproofed walls are to receive a coating of plaster laid directly over the dampproofing course, plaster shall be applied while the Hydronon Dampproofing is still slightly tacky. Walls to be plastered shall provide satisfactory key for the plaster bond.

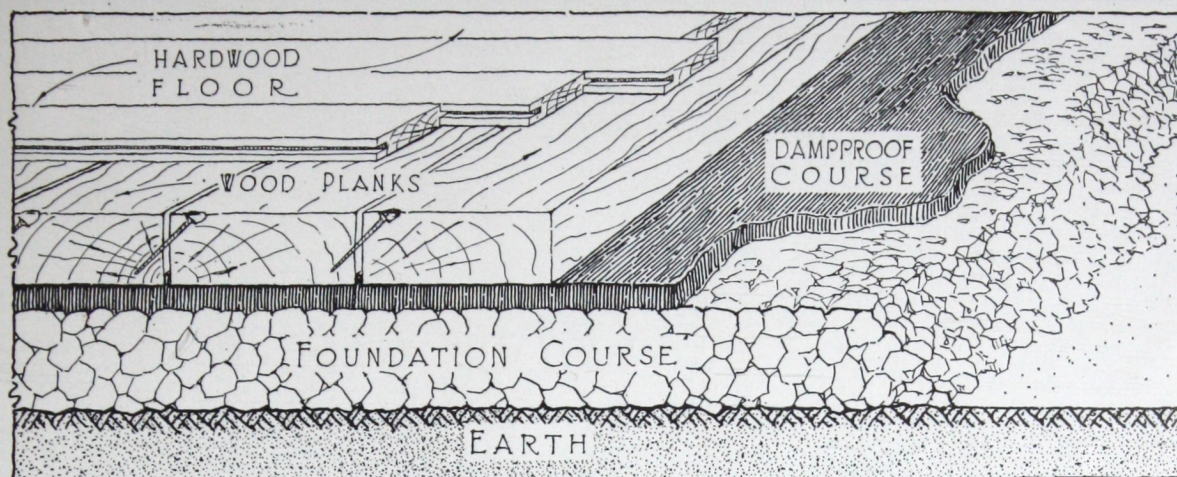
Barrett



BARRETT DAMPROOFING SYSTEM

TAR-ROK METHOD

OVER CONCRETE BASE SLAB OR EARTH



APPLICATION OVER EARTH

SPECIFICATION

Grading—The general contractor for the building shall level off the earth to proper grade to receive the Tar-Rok, and if any filling is necessary it shall be properly puddled and rammed.

Foundation Course—The foundation course shall consist of four (4) inches thickness of screened gravel or crushed stone, not any of which shall exceed two and one-half (2½) inches in longest dimension or be less than one-quarter (¼) inch in size, mixed with sufficient Barrett Sub-Floor Tar No. 5 (as specified) so that it will compact under a roller after being spread evenly in place. It shall then be rolled until the stones do not creep under the roller. The Tar for this course may be heated to not more than two hundred (200) degrees F., and in cold weather the stone shall be slightly warmed if necessary, so that the Tar will mix with the stone and the stone spread evenly. The roller used for this work shall weigh not less than three hundred (300) pounds to each foot in length. Sub-Floor Tar used in foundation course shall be approximately (See Note 1):

Six (6) gallons for each cubic yard of two and one-half (2½) inches to one (1) inch crushed stone;

Nine (9) gallons for each cubic yard of two and one-half (2½) inches to one-quarter (¼) inch crushed stone;

Seven (7) gallons for each cubic yard of coarse-screened gravel;

Ten (10) gallons for each cubic yard of fine-screened gravel.

Note 1—Only sufficient Tar should be used so that the stone or gravel will properly compact and provide a suitable surface for spreading the dampproof course.

Dampproof Course—The dampproof course shall consist of a fine sand and thoroughly mixed with Barrett Sub-Floor Tar No. 7 in the proportion of not less than twenty-five (25) nor more than thirty (30) gallons of Tar to each cubic yard of sand. The sand shall be thoroughly dry before mixing, and both sand and Tar shall be heated sufficiently to make them mix freely, but neither sand nor Tar shall be hotter than two hundred twenty-five (225) degrees F., when being mixed together. If a thick, white smoke arises from the mixture, indicating it is overheated, five (5) gallons more Tar to each yard of sand shall be required. This mixture shall be spread evenly one and one-quarter (1¼) to one and one-half (1½) inches thick (so it will compact to one (1) inch) over the foundation, leveled with straight-edge, and followed closely with plank.

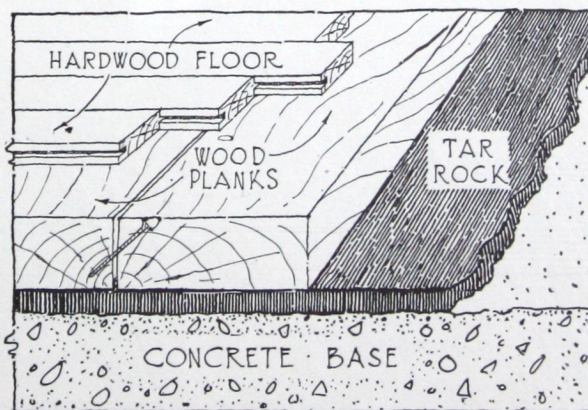
The plank shall be laid on this soft mixture, and bedded on it by hammering until the proper stability is obtained and the plank brought to a proper level and toe-nailed. If after hammering any plank is below the proper level, the plank shall be taken up and more of the mixture spread on. (The plank and finished flooring shall be furnished and laid by other contractors.)

SPECIFICATION

The general contractor for the building shall level off the concrete to proper grade to receive the Tar-Rok Dampproof course.

Dampproof Course—The dampproof course shall consist of a fine sand thoroughly mixed with Barrett Sub-Floor Tar No. 7 in the proportion of not less than twenty-five (25) nor more than thirty (30) gallons of Tar to each cubic yard of sand. The sand shall be thoroughly dry before mixing, and both sand and Tar shall be heated sufficiently to make them mix freely, but neither sand nor Tar shall be hotter than two hundred twenty-five (225) degrees Fahrenheit when being mixed together. If a thick, white smoke arises from the mixture, indicating it is overheated, five (5) gallons more Tar to each yard of sand shall be required. This mixture shall be spread evenly one and one-quarter (1¼) inches to one and one-half (1½) inches thick (so it will compact to one (1) inch) over the foundation, leveled with a straight-edge, and followed closely with dry, well seasoned plank.

The plank shall be laid on this soft mixture, and bedded on it by hammering until the proper stability is obtained and the plank brought to a proper level and toe-nailed. If after hammering, any plank is below the proper level, the plank shall be taken up and more of the mixture spread on. (The plank and finished flooring shall be furnished and laid by other contractors.)



APPLICATION OVER CONCRETE



THE Barrett Company manufactures, in addition to the Built-Up Roofing and Waterproofing Materials mentioned in this manual, an extensive line of prepared roofing products, such as mineral-surfaced asphalt shingles, roll roofings, sheathings, building papers, roof preservatives and repair materials, protective paints, wood preservatives, etc., constituting a comprehensive service for the building industry. Particulars concerning any materials in these classifications will be furnished upon request.

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